OFER 8406

LIFE SCIENCE AREAS OF NATURAL AND SCIENTIFIC INTEREST IN SITE DISTRICT 6-1

A Review and Assessment of Significant Natural Areas in Site District 6-1

September 1984

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For convenience, this report may be referred to as OFER 8406. It is one of a number of Open File Ecological Reports comprised of reconnaissance surveys and inventories of ecological areas in Ontario.

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PREFACE

In 1977, the Parks and Recreational Areas Programme of the Ontario Ministry of Natural Resources, with special funding approved by Management Board of Cabinet, initiated a provincial survey of natural areas in connection with park system planning. A parallel initiative focused on the identification of geological sites representative of Ontario's earth science diversity. The mandate for these surveys stem from the protection objective of the Ontario Provincial Parks Policy (1978), which is "to protect provincially significant elements of the natural and cultural landscapes of Ontario."

The overall objective of the natural areas survey is to identify a series of ecological areas that comprise the spectrum of natural landscapes, environments and biotic communities in Ontario. This objective issues from a Cabinet endorsed guideline of the 1978 parks policy which recognizes the role of provincial parks in protecting "a system of features representative of Ontario's life science history and diversity". With this aim, technical guidelines help to direct the selection, documentation and evaluation of natural areas throughout the site regions and site districts of the province.

Between 1980 and 1982, evaluations of remnant natural areas were undertaken in the site districts within the Central and Southwestern Regions of the Ministry. Through these assessments, the finest natural areas were chosen to complement natural features already represented within a series of Nature Reserves proposed through an earlier review of the provincial parks and park reserves (Lindsay and Hanna, 1980). In addition, natural areas identified through this survey complement the Candidate Nature Reserves already proposed for the Niagara Escarpment Planning Area (Parks Planning Branch, 1976).

The present report was issued as a draft in 1984 under the title *An Identification and Evaluation of Life Science Candidate Nature Reserves in Site District 6-1*. Now in the final edition, it is one of a series of such reports which have been completed to date and are available as 'Open File Ecological Reports'. The findings of these reports have provided the basis for many of the 'Recommended Provincial Parks' announced by the Minister in June 1983, and the 'Areas of Natural and Scientific Interest' designated in the District Land Use Guidelines also released at that time.

Although evolution of the land use planning process since 1981 has produced new terminology incorporating natural areas, this nomenclature is not used in this report. Rather, natural areas are referred to as either Candidate Nature Reserves or as Significant Sites. This is distinct from the new terminology, as used in the District Land Use Guidelines (OMNR, 1983), which groups natural areas and geological sites as Areas of Natural and Scientific Interest (ANSIs).

According to the District Land Use Guidelines, ANSIs may vary in level of significance. The most significant of these, those referred to as Candidate Nature Reserves in this report make the greatest contribution to the Ministry's protection objective and are listed in the District Land Use Guidelines. ANSIs which contribute to a lesser degree to the provincial protection objective are referred to as Significant Sites in this report and are considered to be at least regionally significant. The policy statement for Areas of Natural and Scientific Interest is appended.

Site district evaluations in the Central and Southwestern Regions of the Ministry were carried out by three biologists -- K.M. Lindsay, R. Hanna and R. Klinkenberg. Lindsay coordinated and directed the work, and evaluated Site Districts 6-5, 6-7 and 7-2. Hanna examined Site Districts 6-1, 6-6, 6-8, 6-13, 7-4, and 7-6; Klinkenberg examined Site Districts 7-1 and 6-1. While all three biologists shared common objectives and collaborated in developing evaluation techniques, each undertook field work and evaluation using methods appropriate to their respective site districts.

Each site district report includes an analysis and discussion of the natural features and natural areas of the site district, a discussion of the methodology, recommendations for further work and possible methods of natural areas protection. Check-sheets for Candidate Nature Reserves are appended, as are brief descriptions of other natural areas in the site district.

The information collected during the site district assessments forms the foundation of a provincial natural areas data base. This data base is being updated as new information is obtained. It is an important component for the planning process at district, regional and provincial levels of the Ministry. Readers are invited to add to the data base, either by contributing to studies conducted by the Ministry, or through information contributed to other groups seeking to protect natural areas.

Although site district assessments were designed to identify those natural areas which contribute mainly to the protection objective of the Ministry, this information should prove useful to regional and local governments, conservation authorities and other organizations involved with the identification and protection of significant natural areas. Protection of natural areas may be achieved in several ways, including the purchase of sites by outside agencies. Where natural areas designated as ANSIs occur on public lands managed by the Ministry, it will ensure that the land uses and activities which occur, provide for the protection of identified values. On private lands, the Ministry will, through cooperation with others, attempt to ensure that landowners are aware of the significant features on their properties and seek the owners' cooperation in protecting such features.

ACKNOWLEDGEMENTS

Many people contributed to the preparation of these reports. H.J. Featherston, H. Pronk, J. Griffin and G. Rodgers (Parks and Recreation Section, Central Region), and E.E. Murphy, G.E. Martelle and I. Seddon (Parks and Recreation Section, Southwestern Region), played a major role in the administration of this project. Technical direction for the project came from an informal committee composed of the Parks and Recreation Coordinators of both regions, H.J. Featherston and E.E. Murphy, the Regional Park Planners, G. Rodgers, W. McNab and I. Seddon, and T.J. Beechey (Life Science Coordinator, Parks and Recreational Areas Branch, Queen's Park). Discussions on technical matters with T.J. Beechey, I. Seddon, W. McNab and G. Rodgers proved especially valuable.

Throughout this study, K. Lindsay provided overall direction, discussion, advice and encouragement. P. Terpstra carried out the initial background research and map preparation, while J. Green helped substantially with additional research and airphoto interpretation during the revision process. J. Rhodes provided valuable assistance with preliminary data analysis, field work and initial site analysis. R. Hanna provided valuable information on sites extending into Site District 6-2. Brief discussions held with several individuals knowledgeable about Site District 6-1 were much appreciated. These included P. Eagles, C. Campbell, B. Houck, T. Reznicek, M. Oldham, D. McLeod, B. Crins, W. MacMillan, D. Carleton, J. Schwindt and many others.

Special mention should be made of the assistance and encouragement of B. Klinkenberg throughout the preparation of this report and the earlier draft. Discussions held and his review of the draft report were invaluable. The author extends a special thank you to K. Lindsay for her encouragement and assistance throughout all stages of this study. Many thanks also to the typists of the various drafts of this report.

The draft Site District 6-1 report was reviewed by selected external experts familiar with the geographical area under study in Site District 6-1. The comments made by C. Campbell and L. Lamb are appreciated and have been added to the data base for ANSIs at district and regional offices and the main office of the Ministry. These reviews generally confirmed the selection of ANSIs made by this site district study.

CONTENTS

	Page Number
PREFACE	i
ACKNOWLEDGEMENTS	iii
TABLE OF CONTENTS	v
LIST OF MAPS AND TABLES	vi
SUMMARY	vii
1. INTRODUCTION	1
2. METHODOLOGY	9
3. CANDIDATE NATURE RESERVES	13
4. CONCLUSIONS	17
GLOSSARY	19
APPENDIX A: CANDIDATE NATURE RESERVE CHECK-SHEETS AND ENVIRONMENTAL DATA CARDS FOR SIGNIFICANT SITES IN SITE DISTRICT 6-1, WEST OF THE NIAGARA ESCARPMENT PLANNING AREA	21
APPENDIX B: CANDIDATE NATURE RESERVES IN THE NIAGARA ESCARPMENT PLANNING AREA PORTIONS OF SITE DISTRICT 6-1	55
APPENDIX C: DOCUMENTED SITES OF BIOLOGICAL SIGNIFICANCE	57
APPENDIX D: POLICY FOR AREAS OF NATURAL AND SCIENTIFIC INTEREST	69
BIBLIOGRAPHY	71
MAP REFERENCES	79

LIST OF MAPS AND TABLES

Figure Number

Page Number

1. Site Regions and Districts of Southern Ontario 2

2. Site District 6-1 Relative to Niagara Escarpment Planning Area 3

3. Location of Candidate Nature Reserves in Site District 6-1, west of the Niagara Escarpment Planning Area 14

Table Number

1. Summary of Natural Features Analysis and Candidate Nature Reserve Selection Procedure by Physiographic Region and Landform for Site District 6-1, west of the Niagara Escarpment Planning Area 5

2. Time Allocation for Natural Features Analysis and Candidate Nature Reserve Selection Procedure 10

Map Number

1. Candidate Nature Reserves and Significant Sites in Site District 6-1, west of the Niagara Escarpment Planning Area

SUMMARY

Site District 6-1 is located within the central part of the southwestern Ontario peninsula north of a line drawn between Grand Bend and the hamlet of Westover near Galt. Eight of the minor physiographic regions identified by Chapman and Putnam (1973) are found in this site district: the Horseshoe Moraines, Stratford Till Plain, Guelph Drumlin Field, Waterloo Hills, Hillsburg Sand Hills, Flamborough Plain, Dundalk Till Plain and Huron Slope. Landforms in the site district vary and include till and kame moraines with associated intermorainal depressions, drumlinized and undrumlinized till plains, spillways and drumlin fields. Elevation in the site district ranges from 533 m (1,750 feet) in the east to 183 m (600 feet) in the west. The headwaters of several Ontario rivers and their tributaries rise within the site district, including those of the Bayfield River which drains west into Lake Huron and the Nith and Eramosa Rivers which feed south into the Grand River. The dominant vegetation type remaining in the site district is lowland red and silver maple swamp forest. Kettle lakes are frequent on the kame moraines, till moraines and spillways.

An analysis of the physiographic regions, landforms and present natural landscape in Site District 6-1 suggests that the following vegetation-landform features are representative of the site district: wetlands (including swamp forest with associated wetlands and kettle lakes and bogs), river valley systems, and upland forests on till moraines, kame moraines and spillways. This analysis was initiated in December 1980 and was revised in the fall of 1982. The proportion of the site district remaining in a natural and relatively undisturbed state varies from 5 to 10 percent on the Stratford Till Plain to approximately 35 percent on the Horseshoe Moraines. The site district is predominantly agricultural in character.

No provincial parks or park reserves are located within the study area, which consists of Site District 6-1 west of the Niagara Escarpment Planning Area. The following six candidate nature reserves offer the best representation of vegetation-landform features in the study area:

WETLANDS		
	Swamp Forest and Associated Wetlands	Beverly Swamp (40P/8 720025)
		Greenock Swamp (41A/3 700890)
		Saratoga Swamp (40P/13 530510)
	Kettle Lakes and Bogs	Spongy Lake Bog (40P/7 295070)
RIVER VALLEY SYSTEMS		Eramosa River Valley (40P/9 685345)
		Bayfield River (40P/12 495230)

All six candidate nature reserves are recommended for protection. Each of the six includes limited representation of some upland forest vegetation. As part of the site selection process, an additional thirty significant sites were identified. These sites are also recommended for protection through the planning processes of municipal and provincial governments and conservation authorities.

1. INTRODUCTION

The purpose of this study was to select candidate nature reserves and to identify regionally significant sites representative of the remaining natural vegetation-landform features of Site District 6-1 west of the Niagara Escarpment Planning Area.

Site District 6-1 extends across the southwestern Ontario peninsula from Huron County on the west to Halton County in the east and includes Perth, Waterloo, Wellington, Wentworth and Peel Counties. The northern boundary follows a semicircle from northeast of Kinloss in Bruce County to just north of Erin in Halton County, while the southern boundary extends from just east of Grand Bend to just northwest of Hamilton (Figure 1). A small section of the easternmost part of Site District 6-1 lies within the Niagara Escarpment Planning Area (Figure 2). This portion of the site district was excluded from this study because an identification and evaluation of candidate nature reserves within the Niagara Escarpment Planning Area was already available (Park Planning Branch, 1976). Appendix B contains a summary of the candidate nature reserves within the Niagara Escarpment Planning Area portion of Site District 6-1.

Site District 6-1 is one of the fifteen site districts in Site Region 6. A site region is an area of land within which the response of the vegetation to the features of the landform follows a consistent pattern (Hills, 1959). Hills subdivided each site region into site districts based on landforms which set apart fairly large areas. Site Region 6, including Site District 6-1, is described by Hills (1959) as a gently rolling to rolling terrain with ice-laid materials deeply covering the bedrock over 80 percent of the area. Local plains of lacustrine deposits with little relief, and limestone plains shallowly overlain by drift are restricted to several locations. Vegetation patterns include sugar maple-beech-hemlock; sugar maple-oak-ash; and oak-ash on normal mesic, normal dry and hot dry sites, with hemlock, yellow birch, spruce and white cedar on wet sites. Site District 6-1 is described by Hills (1959) as a plain characterized by smooth clay areas and gently rolling moraines of deep and moderate lime content. The dominant landforms of this site district are spillways, drumlinized and undrumlinized till plains, and till and kame moraines (Chapman and Putnam, 1972). Areas of sand plain, limestone plain, drumlin fields and eskers occupy a more limited area within the site district.

Eight of the minor physiographic regions outlined by Chapman and Putnam (1973) for southern Ontario lie wholly or partially within the boundaries of Site District 6-1. These are the Horseshoe Moraines, Stratford Till Plain, Guelph Drumlin Field, Waterloo Hills, Flamborough Plain, Huron Slope, Dundalk Till Plain and Hillsburg Sand Hills. Together the Horseshoe Moraines, Stratford Till Plain, Guelph Drumlin Field, and Waterloo Hills, occupy approximately 90 percent of the site district. The Huron Slope, Dundalk Till Plain and Hillsburg Sand Hills each occupy less than one percent of the site district.

The Stratford Till Plain covers 25 percent of the site district. It is a broad clay plain interrupted by several terminal moraines. Although this physiographic region lies mainly in Site District 6-1, portions also occur in Site Districts 7-6 and 6-5. Twenty-seven percent of the site district is made up of the Horseshoe Moraines physiographic region. This is a series of morainic uplands separated by spillway deposits and till plains. The Horseshoe Moraines region also extends north into Site District 6-5 and south into Site Districts 7-6 and 7-2. The Waterloo Hills and the Guelph Drumlin Field physiographic regions each cover 20 percent of

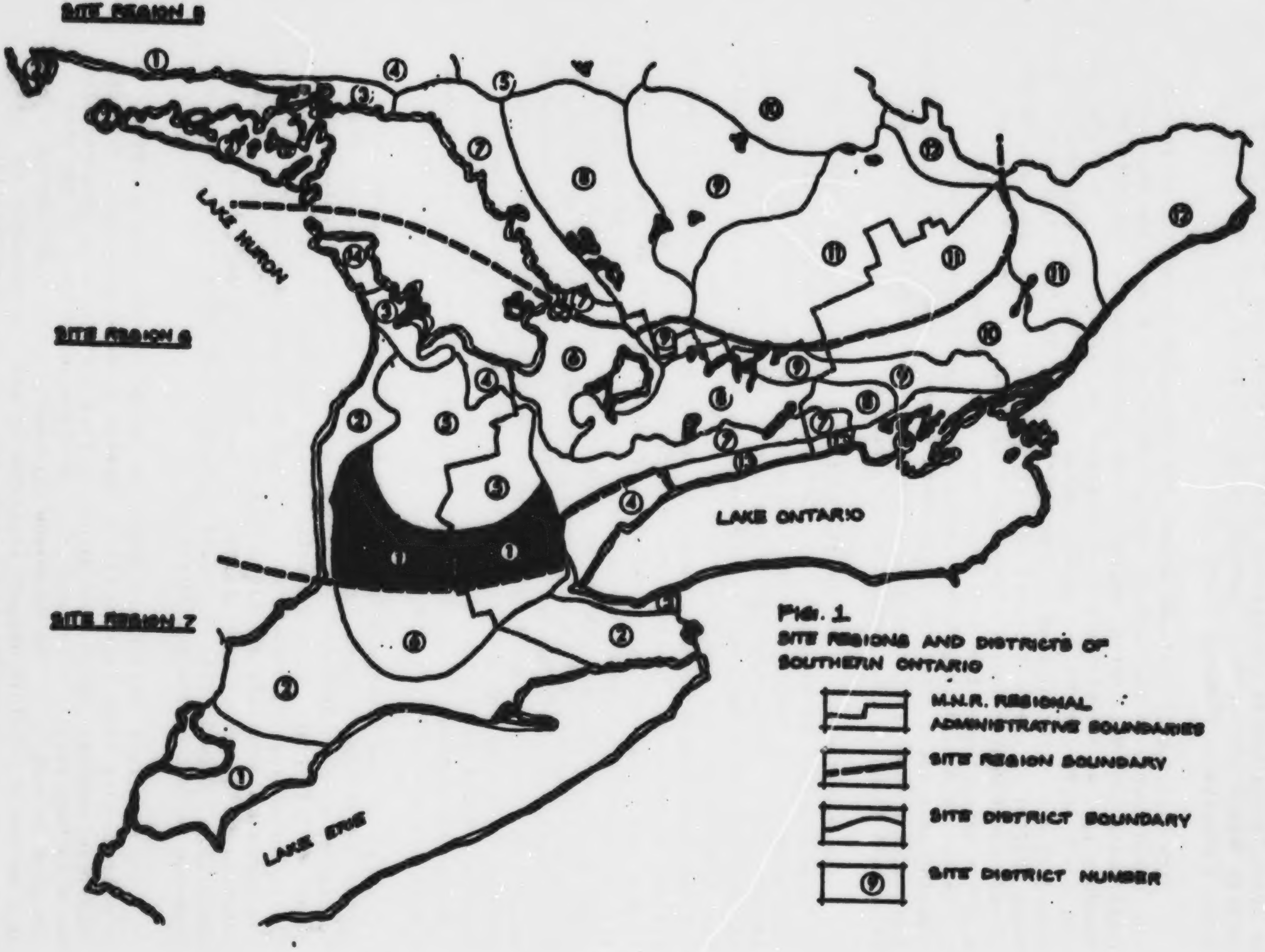
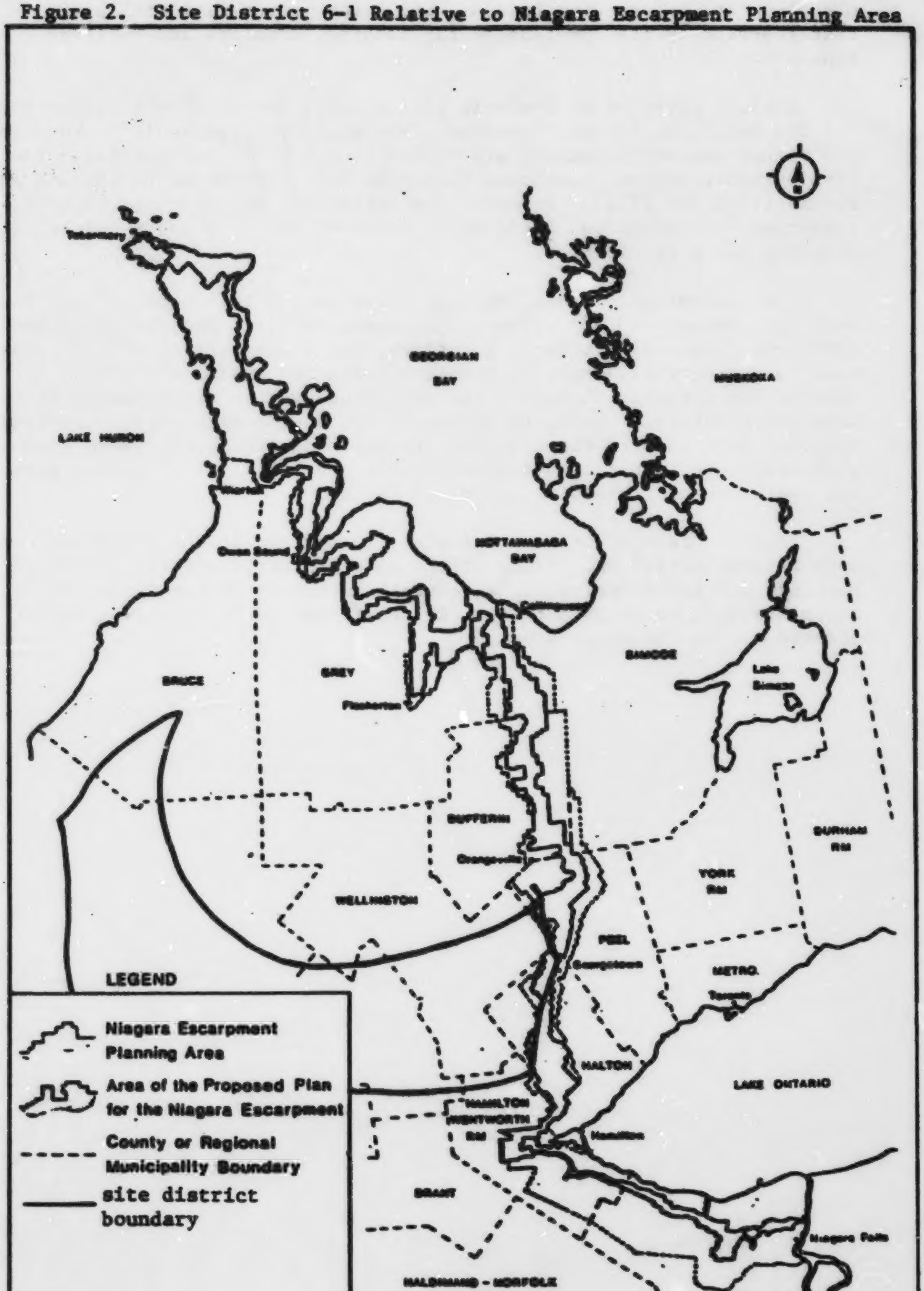


Fig. 1
SITE REGIONS AND DISTRICTS OF SOUTHERN ONTARIO

Figure 2. Site District 6-1 Relative to Niagara Escarpment Planning Area



the site district. The former is primarily sandy hills with outwash sands occupying the intervening hollows, while the latter is a till plain characterized by its numerous gently sloping, drumlins and spillway deposits.

Table 1 presents an analysis of the landscape of Site District 6-1, and its remaining natural features. The eight physiographic regions that lie within the site district are listed in order of area covered. For each physiographic region, component landforms are given based on Chapman and Putnam (1972 and 1973). As well, the percentage and types of natural areas remaining are estimated, based on a review of the 1:50,000 topographic maps covering the site district.

The predominant vegetation type noted during the course of the field work was lowland red and silver maple swamp forest. Pockets of upland hardwoods occurred at several locations, but these forests were generally small and disturbed. Most of the better-drained upland sites have been cleared for farming, with only the low-lying, wetter sites remaining in a relatively natural, undisturbed state. The most common vegetation-landform features left in Site District 6-1 are wetlands (including swamp forest with associated wetlands and kettle lakes and bogs), river valley systems and small, remnant examples of upland forest.

In Site District 6-1 approximately 10 percent of the landscape remains in a natural condition. Parts of the site district, notably the Horseshoe Moraines and the Waterloo Hills, contain much more of the landscape in a natural state, up to 35 percent. No provincial parks or park reserves are located within the study area.

TABLE 1. SUMMARY OF THE NATURAL FEATURES ANALYSIS AND NATURE RESERVE SELECTION PROCEDURE
BY PHYSIOGRAPHIC REGION AND LANDFORM FOR SITE DISTRICT 6-1
WEST OF THE NIAGARA ESCARPMENT PLANNING AREA

ANALYSIS OF NATURAL FEATURES OF SITE DISTRICT					FEATURES REPRESENTED BY CANDIDATE NATURE RESERVES IN PROVINCIAL PARKS/RESERVES			FEATURES MISSING FROM PROVINCIAL PARKS AND PARK RESERVES	CANDIDATE NATURE RESERVES SELECTED TO REPRESENT THE MISSING FEATURES
Physiographic Regions wholly or partly within Site District	Proportion of Site District covered by Physiographic Region	Landforms found within Physiographic Region	Proportion of Physiographic Region occupied by each Landform	Types of Natural features remaining on these Landforms and proportion remaining in a Natural Condition	Park Name	Feature(s)	Approx.Area		
Horseshoe Moraines (also in 6-2, 6-5, 7-2 and 7-6)	27	till plains	31	-5 to 10% scattered woodlots	-	-	-	-wetland complexes -river valley systems -upland woods	Greenock Swamp (41A/3 700890) Saratoga Swamp (40P/13 530510) Bayfield River (40P/12 480230)
		till moraine	25	-40% creek valleys and scattered woodlots					
		kame moraine	25	-20% swamps, woodlots and creek valleys					
		spillway	15	-70% swamps, woodlots and creek and river valleys					
		peat and muck	4	-80% swamp					
Stratford Till Plain (also in 6-5 and 7-6)	25	till plains	70	-5% scattered tiny woodlots, upland woods	-	-	-	-upland woods -wetland complexes	
		till moraine	10	-1% scattered tiny woodlots					

TABLE 1. SUMMARY OF THE NATURAL FEATURES ANALYSIS AND NATURE RESERVE SELECTION PROCEDURE BY PHYSIOGRAPHIC REGION AND LANDFORM FOR SITE DISTRICT 6-1 WEST OF THE NIAGARA ESCARPMENT PLANNING AREA

ANALYSIS OF NATURAL FEATURES OF SITE DISTRICT					FEATURES REPRESENTED BY CANDIDATE NATURE RESERVES IN PROVINCIAL PARKS/RESERVES			FEATURES MISSING FROM PROVINCIAL PARKS AND PARK RESERVES	CANDIDATE NATURE RESERVES SELECTED TO REPRESENT THE MISSING FEATURES
Physiographic Regions wholly or partly within Site District	Proportion of Site District covered by Physiographic Region	Landforms found within Physiographic Region	Proportion of Physiographic Region occupied by each Landform	Types of Natural features remaining on these Landforms and proportion remaining in a Natural Condition	Park Name	Feature(s)	Approx.Area		
Stratford Till Plain (cont'd)		spillway	10	-5% scattered tiny woodlots					
		muck	6	-25% various woodlots, lowland woods					
		clay plain	2	-tiny, scattered woodlots					
		kame moraine	1	-tiny scattered woodlots					
		esker	1	-tiny scattered woodlots					
Guelph Drumlin Field (also in 6-5)	20	till plain and drumlin fields	60	-no entirely forested drumlins -5% scattered woodlots	-	-	-	-river valley systems -upland woods	Eramosa River Valley (40P/9 685345)
		spillway	39	-3% along creeks and rivers					
		esker	<1						
		kame moraine	<1						

TABLE 1. SUMMARY OF THE NATURAL FEATURES ANALYSIS AND NATURE RESERVE SELECTION PROCEDURE BY PHYSIOGRAPHIC REGION AND LANDFORM FOR SITE DISTRICT 6-1 WEST OF THE NIAGARA ESCARPMENT PLANNING AREA

ANALYSIS OF NATURAL FEATURES OF SITE DISTRICT					FEATURES REPRESENTED BY CANDIDATE NATURE RESERVES IN PROVINCIAL PARKS/RESERVES			FEATURES MISSING FROM PROVINCIAL PARKS AND PARK RESERVES	CANDIDATE NATURE RESERVES SELECTED TO REPRESENT THE MISSING FEATURES
Physiographic Regions wholly or partly within Site District	Proportion of Site District covered by Physiographic Region	Landforms found within Physiographic Region	Proportion of Physiographic Region occupied by each Landform	Types of Natural features remaining on these Landforms and proportion remaining in a Natural Condition	Park Name	Feature(s)	Approx.Area		
Waterloo Hills (also in 7-6 and 6-5)	20	till plain	40	-1% tiny scattered woodlots	-	-	-	-kettle lakes and bogs	Spongy Lake Bog (40P/7 295070)
		kame moraine	40	-25% woodlots and small wetlands				-upland woods	
		spillway	20	-1% various woodlots				-wetland complexes	
		till moraine							
Flamborough Plain (also in 7-6)	7	limestone plain	80	-25% lowland between drumlins -no forested drumlins	-	-	-	-swamp forest and associated wetlands	Beverly Swamp (40P/8 720025)
		muck	5	-15% wetlands					
		till plain (drumlinized)	3	-5% various woodlots					
		till moraine	5	-50% swamp forest and associated wetlands					

TABLE 1. SUMMARY OF THE NATURAL FEATURES ANALYSIS AND NATURE RESERVE SELECTION PROCEDURE BY PHYSIOGRAPHIC REGION AND LANDFORM FOR SITE DISTRICT 6-1 WEST OF THE NIAGARA ESCARPMENT PLANNING AREA

ANALYSIS OF NATURAL FEATURES OF SITE DISTRICT					FEATURES REPRESENTED BY CANDIDATE NATURE RESERVES IN PROVINCIAL PARKS/RESERVES			FEATURES MISSING FROM PROVINCIAL PARKS AND PARK RESERVES	CANDIDATE NATURE RESERVES SELECTED TO REPRESENT THE MISSING FEATURES
Physiographic Regions wholly or partly within Site District	Proportion of Site District covered by Physiographic Region	Landforms found within Physiographic Region	Proportion of Physiographic Region occupied by each Landform	Types of Natural features remaining on these Landforms and proportion remaining in a Natural Condition	Park Name	Feature(s)	Approx.Area		
Flamborough Plain (cont'd)		sand plain	5	-2% swamp forest and associated wetlands	-	-	-	-	-
		esker	<2						
Huron Slope (also in 6-2, 7-2 and 7-6)	<1	spillway	10	-river valley	-	-	-	-river valley systems -upland woods -wetland complexes	-
		bevelled till plain	60						
		till moraine	15	-1% scattered woodlots					
		till plain	15	-1% scattered woodlots					
Dundalk Till Plain (mainly in 6-5)	<1	peat and muck	<1		-	-	-	-	-
Hillsburg Sand Hills (mainly in 6-5, only a very small part in 6-1)	<1	kame moraine	-	-	-	-	-	-	-

2. METHODOLOGY

The following section outlines the four steps taken during the analysis of natural features found in Site District 6-1 and the selection of candidate nature reserves.

(i) Natural Features Analysis

The protection objective of the Ontario Provincial Parks Policy (1978) is "to protect provincially significant elements of the natural and cultural landscape of Ontario". To address the life science component of the protection objective, an assessment of the provincial parks and park reserves in Central and Southwestern Regions was carried out (Lindsay and Hanna, 1980). This assessment identified significant life science features and proposed Nature Reserve parks and zones within the provincial park system in the Central and Southwestern administrative regions of the ministry. Following this assessment, the provincial parks program began to identify the natural features and landscapes that were not included in the existing provincial park system. For this purpose, site districts, as defined by Hills (1959), served as an ecological framework for the analysis of the diversity of natural features found in southern Ontario in general, and in Central and Southwestern Regions in particular. An initial overview of the natural features characteristic of each site district was undertaken. This overview for Site District 6-1 is summarized on Table 1.

Site District 6-1 was initially assessed in December 1980. This assessment was revised in the fall and winter of 1982 and 1983. No provincial parks or park reserves are located within Site District 6-1, therefore no natural features could be represented within provincial parks. As part of the Natural Features Analysis, the minor physiographic regions of Chapman and Putnam (1973) were used to divide the site district into distinctive landform complexes. The proportion of the site district covered by each physiographic region was estimated. Physiographic maps were used to tabulate the landforms of each physiographic region and to derive their relative importance within the site district as a whole. After scanning 1:50,000 topographic maps, the prominent natural features associated with various landform types were recorded, along with an estimate of the percentage of natural area remaining in a relatively undisturbed condition. A final statement about the vegetation-landform features typical of the site district, but missing from the provincial parks system, was the end result of the natural features analysis (Table 1).

The remainder of the study focused on selecting and documenting the best examples of the dominant natural features of the site district, which were identified through the Natural Features Analysis described above. Sections (ii) to (iv) of the Methodology describe the steps followed. Table 2 tabulates the time spent on each step.

(ii) Review of Background Information

Background information on sites of biological significance had already been compiled and mapped on a set of 1:50,000 N.T.S. maps on file at the Parks and Recreation Section, Ministry of Natural Resources, Central Region, Richmond Hill. The background information available for the site district was summarized according to 1:50,000 N.T.S. map sheets and physiographic regions, by P. Terpstra. These summaries are presented in Appendix C. The major sources of information for this site district included Environmentally Sensitive Areas (ESA) reports, Ministry of Natural

TABLE 2. TIME ALLOCATION FOR NATURAL FEATURES ANALYSIS AND CANDIDATE NATURE RESERVE SELECTION PROCEDURE

STEP	DAYS
1. Natural Feature Analysis (overview of natural landscape of Site District 6-1 and identification of life science features missing from provincial parks system)	5
2. Review of Background Information (review of topographic maps, physiography maps, background information on documented sites of biological significance, air photos, and selection of sites for field checking)	15
3. Field Reconnaissance	6
4. Site Evaluation (final review of air photos, maps and field notes, preparation of environmental data cards and mapping of significant sites, selection of candidate nature reserves after evaluation and comparison of significant sites)	30

Resources' Sensitive Areas and internal reports (SA), and International Biological Program (IBP) check-sheets. Examination of airphotos and other governmental reports provided additional information.

Topographic and physiographic maps were reviewed in conjunction with the information on documented sites of biological significance to select sites with representative life science features and nature reserve potential. For portions of the study area with little or no background information, sites were chosen strictly from maps. The 1978 airphotos for sites were examined and after additional selection, a list of sites for field checking was prepared.

The following five criteria formed the basis of all phases of site selection and evaluation. Sites illustrating similar features were compared in terms of representation, diversity, condition, ecological considerations and special features.

(a) Representation - Representation of the remaining natural features of the site district was of primary importance. The dominant vegetation-landform features of the site district were given special emphasis.

(b) Diversity - Diversity was appraised in terms of the number and range of vegetation-landform features or habitats found within a site. The representation value of a site usually increases in proportion to the diversity of habitats contained within the site.

(c) Condition - The degree of past disturbance to the main feature(s) of the site was assessed. Logging, grazing, fire, drainage, flooding, mining, housing developments, transportion and utility corridors and recreation were some of the impacts that were considered. Because all of southern Ontario has been affected by human disturbance to varying degrees, none of the sites selected are pristine.

(d) Ecological Considerations - Ecological considerations such as size, shape, buffering from adjacent land use and watershed location were also weighed. Generally, larger sites, which would be more likely to maintain stable and diverse natural communities, were chosen over smaller sites. However, for certain life science features only small remnant sites are left, especially in the extreme southern part of Ontario (Site Region 7). In such cases, sites that were close together or linked were ranked higher than widely spaced, small areas. Recent work on island biogeography (Diamond, 1975) suggests that species extinctions are less likely to occur in larger sites, linked sites or closely spaced sites than small, isolated sites. Headwater areas and watershed units where some degree of control over inputs would be possible were given special attention.

(e) Special Features - Allowance was also made for special features such as the presence of rare and endangered species, species of phytogeographical interest (significant species), nesting sites for colonial birds such as heronries, and concentrations of breeding and/or migratory waterfowl. The special features criterion was of secondary importance and was applied only after representation, diversity, condition and ecological considerations had been assessed. Because detailed and complete biological data was lacking for most sites, caution was exercised in comparing the special features of sites with different levels of background data.

(iii) Field Reconnaissance

About 40 sites in Site District 6-1 were field checked over a six day period (September 29, 30, October 1-3, 1980, and August 31, 1982). These sites were checked following a pre-determined route which attempted to examine as many biological communities and site types as time permitted. Features noted during field work included site condition and disturbances, plant communities present (where possible), immediate threats to the site, adjacent land use, and general site characteristics such as topography, drainage and soil type.

Due to time constraints, some significant sites and one candidate nature reserve were not field checked. These sites were assessed based on airphoto interpretation, review of background information and discussion with knowledgeable individuals.

(iv) Site Evaluation

Following field reconnaissance, each site was reviewed, evaluated and compared with other similar sites within its vegetation-landform type. A few poor quality or unrepresentative sites were deleted. The remainder were denoted significant sites (see Glossary). Environmental Data Cards were prepared for each significant site, outlining its location, vegetation-landform feature(s), general physical and biological characteristics, watershed, size and disturbances. Boundaries were mapped on 1:50,000 topographic maps.

Following further evaluation within vegetation-landform types, candidate nature reserves (see Glossary) were selected from the list of significant sites. Representation, diversity, condition and ecological considerations were weighed equally in the evaluation process, while special features were of secondary importance. Life Science Inventory Check-sheets were written for each candidate nature reserve, documenting its significant features, comparing it to other similar significant sites and providing the rationale for its selection. Thus, the best quality sites in the site district were selected as candidate nature reserves.

Appendix A consists of the check-sheets for candidate nature reserves and the environmental data cards for significant sites. Sites are listed in order of priority or significance within groupings of similar sites. Topographic maps (1:50,000 scale) showing the boundaries of significant sites and candidate nature reserves, and background data, are on file at the Parks and Recreation Section, Ministry of Natural Resources, Central Region, Richmond Hill and Southwestern Region, London.

The preparation of this report involved the compilation of existing data on the natural areas of Site District 6-1. This data included available information on Environmentally Sensitive Areas in the site district, airphoto review, topographic map review, and some contact with individuals knowledgeable about the site district. A limited amount of time was devoted to field checking of sites in order to assess their current condition and the degree of representation offered by each.

The emphasis of this study was directed towards vegetation-landform features. Therefore, areas of high quality wildlife and fisheries habitat, and special sites such as concentrations of rare or endangered flora and fauna, are generally missing unless otherwise a component of a representative vegetation-landform feature.

3. CANDIDATE NATURE RESERVES

The natural features analysis of Site District 6-1 identified the following vegetation-landform remaining in a relatively natural state: wetlands (including swamp forest with associated wetlands and kettle lakes and bogs), river valley systems, and upland forests on till moraines, kame moraines and spillways. Table 1 relates these vegetation-landform features to the physiographic regions found in Site District 6-1.

Following the review of background information, airphoto interpretation and limited field work, thirty-six sites in the study area were chosen as significant sites (see Appendix A). Significant sites are considered representative of the site district and of at least regional significance.

After further evaluation six sites were selected as the best quality examples of the major vegetation-landform features of the site district. These are Beverly Swamp, Greenock Swamp, Saratoga Swamp, Spongy Lake Bog, Eramosa River and Bayfield River. The location of these candidate nature reserves is shown in Figure 3. Most of these candidate nature reserves offer representation of several vegetation-landform features. Table 1 presents the candidate nature reserves grouped according to physiographic region and vegetation-landform features.

Three candidate nature reserves were chosen to represent swamp forests and associated wetlands in the site district: Beverly Swamp, Greenock Swamp and Saratoga Swamp. As swamp forests and associated wetland predominate in this site district, it was felt that at least these three sites were necessary to adequately represent the various successional stages of swamp forest and the variety of associated wetland types. Beverly Swamp offers representation of mature red and silver maple swamp, as well as pond wetland community types and pockets of upland beech-maple forest. Greenock Swamp also offers representation of red and silver maple swamp, as well as representation of bog communities. In addition, this swamp supports fen communities, a vegetation type that is not reported to occur in any of the other candidate nature reserves in this site district. Beverly Swamp and Greenock Swamp are both outstanding in that they are two of the largest swamps in southern Ontario. Saratoga Swamp offers undisturbed examples of young to medium-aged maple and cedar swamp, as well as representation of upland beech-maple forest. All three swamps offer limited representation of marsh communities, an uncommon vegetation type in this site district.

The Bayfield River and the Eramosa River Valley were chosen as candidate nature reserves to represent river valley systems, a common feature in the site district. The Eramosa River Valley offers the best representation of cedar slope and floodplain communities, while the Bayfield River offers the best examples of upland deciduous slope and valley rim forests.

One site, Spongy Lake Bog, was chosen to represent kettle lakes and bogs in the site district. This site offers good representation of successional bog stages. The bog present in the Greenock Swamp (i.e., Harrison Bog) offers additional representation of bog vegetation. However, two additional sites presently listed as significant sites should be examined further in order to determine if they offer examples of bog vegetation not yet represented in the candidate nature reserves selected. The two additional sites are St. Augustine Bog and Swamp Forest (40P/13 590570) and Oil Well Bog-Little Tract (40P/8 610115).

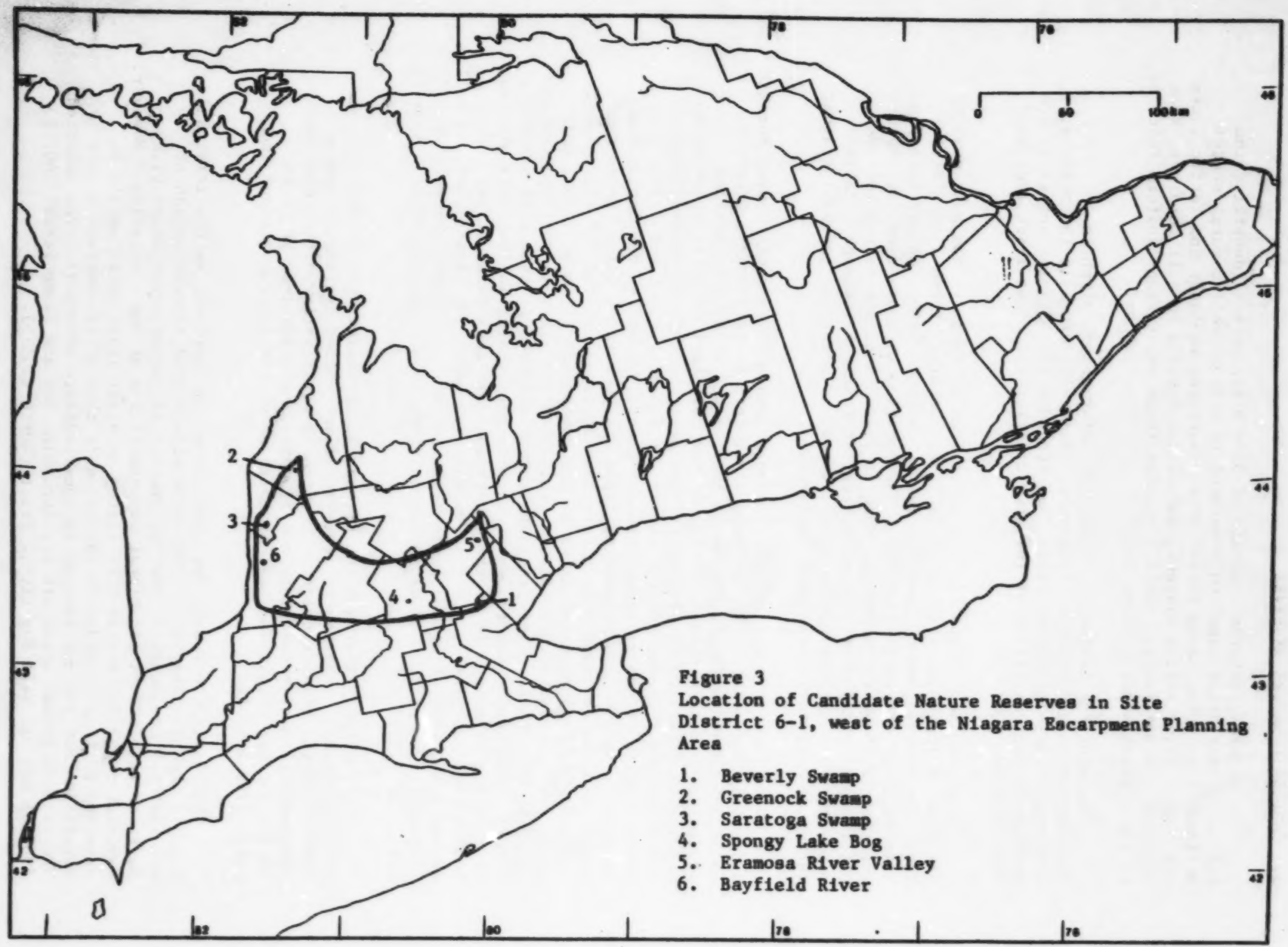


Figure 3
Location of Candidate Nature Reserves in Site District 6-1, west of the Niagara Escarpment Planning Area

1. Beverly Swamp
2. Greenock Swamp
3. Saratoga Swamp
4. Spongy Lake Bog
5. Eramosa River Valley
6. Bayfield River

No candidate nature reserves were chosen to represent upland woods as no sizable, good quality sites with upland forest vegetation were discovered in this site district. Although each candidate nature reserve listed contains examples of upland woods, the vegetation of upland sites is under-represented.

Additional field work and evaluation should be carried out in order to determine if kettle lake and bog features are adequately represented in this site district. These features are partially represented by Spongy Lake Bog and the Harrison Bog component of Greenock Swamp.

4. CONCLUSIONS

No provincial parks or park reserves are located in Site District 6-1. Six candidate nature reserves were chosen to represent vegetation-landform features of Site District 6-1 west of the Niagara Escarpment Planning Area. Three sites were chosen to represent swamp forest with associated wetlands - Beverly Swamp, Greenock Swamp and Saratoga Swamp. Two sites illustrate river valley systems - Eramosa River Valley and Bayfield River. One site, Spongy Lake Bog, was selected to represent kettle lakes and wetlands. No sites were chosen specifically to represent upland forest, although all six candidate nature reserves offer limited representation of this feature. Further study of the six candidate nature reserves should be carried out in order to document the full array of biological and physical features present, and to determine the best means of protection for each site.

Candidate nature reserves can be protected in various ways. Parts of some candidate nature reserves are already owned by the Ministry of Natural Resources or by conservation authorities. Others may be secured through acquisition by organizations such as the Nature Conservancy of Canada and Ontario Heritage Foundation. Land-use zoning in Zoning By-Laws or Official Plans may help to protect other sites.

It should be noted that the thirty additional significant sites identified in this study are valuable ecological areas which should also receive protection. This could be achieved through designations in zoning by-laws and Official Plans and through the land-use planning process. These sites are important for their ecological, hydrological and wildlife functions.

GLOSSARY

Areas of Natural and Scientific Interest (ANSI): ANSIs are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage, scientific study or education. ANSIs may vary in level of significance. The most significant of these, Candidate Nature Reserves in the site district reports, may contribute to the achievement of the Ministry's protection objective. Those which do not contribute to the provincial protection objective are referred to as Significant Sites in the site district report.

Candidate Nature Reserve: Candidate nature reserves are sites selected on a systematic basis to represent the natural features and landscapes of Ontario and to complement other protected zones in the provincial parks system. Candidate nature reserves contain the best examples of the landform and vegetation features of each site district; features that may be of widespread or restricted occurrence within the site district. They are selected after comparison and evaluation of significant sites sharing similar features. Each candidate nature reserve possesses sufficient ecological integrity, buffering capacity and size that protection appears to be a viable management strategy.

Physiographic Region: Chapman and Putnam (1973) described and mapped fifty-two minor physiographic regions within southern Ontario. These physiographic regions are areas with recognizable local landform patterns. Map 1 outlines the physiographic regions that fall wholly or partially within the site district.

Significant Site: A site of at least regional significance and representative of the landform and vegetation features of the site district. Chosen after reviewing the background information available on sites of biological importance, air photo analysis and field checking of selected areas. After final evaluation and comparison of similar significant sites, some were chosen as candidate nature reserves. However, all significant sites are recommended for protection through the land use planning process.

Site District: A subdivision of a site region, with a characteristic pattern of physiographic features (Hills, 1959). Site districts are small scale map units that segregate substantial areas from each other on the basis of broad landform patterns. Refer to Figure 1.

Site Region: An area of land within which the response of the vegetation to the features of the landform follows a consistent pattern (Hills, 1959). Refer to Figure 1.

APPENDIX A: CANDIDATE NATURE RESERVE CHECK-SHEETS AND ENVIRONMENTAL DATA CARDS FOR SIGNIFICANT SITES IN SITE DISTRICT 6-1, WEST OF THE NIAGARA ESCARPMENT PLANNING AREA

Page Number

WETLANDS

SWAMP FORESTS AND ASSOCIATED WETLANDS

Beverly Swamp (40P/8 720025) - CNR[1] 23,31
Greenock Swamp (41A/3 700890) - CNR 25,31
Saratoga Swamp (40P/13 530510) - CNR 29,31
Ellice-Huckleberry Marsh (40P/7 040140) 32
Fletcher Creek Swamp Forest (40P/8 720065) 32
Blue Springs Creek Wetlands (40P/9 730285) 32
Knatchbull Swamp (40P/9 750245) 33
Brookville Swamp (40P/9 770220) 33
Phillipsburg Swamp (40P/7 185085) 33
North Woolwich Swamp (40P/10 404300) 34
Ament and Pollard Tract (40P/11 760400) 34
Galt (Mill) Creek and Forest (40P/8 620060) 34
Brisbane Woods (40P/9 770420) 35
Mountsberg Wildlife Centre (40P/8 770120) 35
Roseville Swamp (40P/8 460000) 35
Phillipsburg Forest (40P/7 230060) 36
Turnberry Swamp (40P/14 710630) 36
Westfield Swamp (40P/14 630480) 36
Hay Swamp (40P/5 540020) 37

KETTLE LAKES AND BOGS

Spongy Lake Bog (40P/7 295070) - CNR 39,41
St. Augustine Bog and Swamp Forest (40P/13 590570) 41
Oil Well Bog - Little Tract (40P/8 610115) 41
St. Clements Sphagnum Bog (40P/10 257174) 42
Puslinch Lake Bog and Wetlands (40P/8 590070) 42
Bamberg Swamp and Bog Lake (40P/7 258155) 42
Little Lakes Bog and Swamp Forest Complex (40P/7 065020) 43

RIVER VALLEY SYSTEMS

Eramosa River Valley (40P/9 685345) - CNR 45,51
Bayfield River (40P/12 480230) - CNR 49
Maitland River Valley (40P/12 480415) 51
West Montrose River Valley (40P/9 443325) 52

UPLAND FORESTS

St. Agatha Beech-Maple Forest (40P/7 275070) 53
St. Helens Beech-Maple Forest (40P/13 570635) 53
Natchez Hills Upland Woods (40P/8 465115) 53
Crosshill Upland Forest Complex (40P/10 230195) 54
Lackner Woods (40P/8 472105) 54
Speedside Forest (40P/9 583356) 54

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[1] CNR indicates a candidate nature reserve

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Beverly Swamp	Cambridge	40P/8	720025

COUNTY, DISTRICT or REGIONAL MUNICIPALITY	LAT.	LONG.	ALT. MIN. - MAX.
Wentworth	43 ° 22 ' N	80 ° 07 ' W	ca.875 ft. - 900 ft.

LOCALITY
east of Cambridge

TOWNSHIP **LOTS** **CONCESSIONS**

AREA
ca. 4850 acres ca. 1950 ha

OWNERSHIP
Conservation Authority/private

ADMINISTRATION

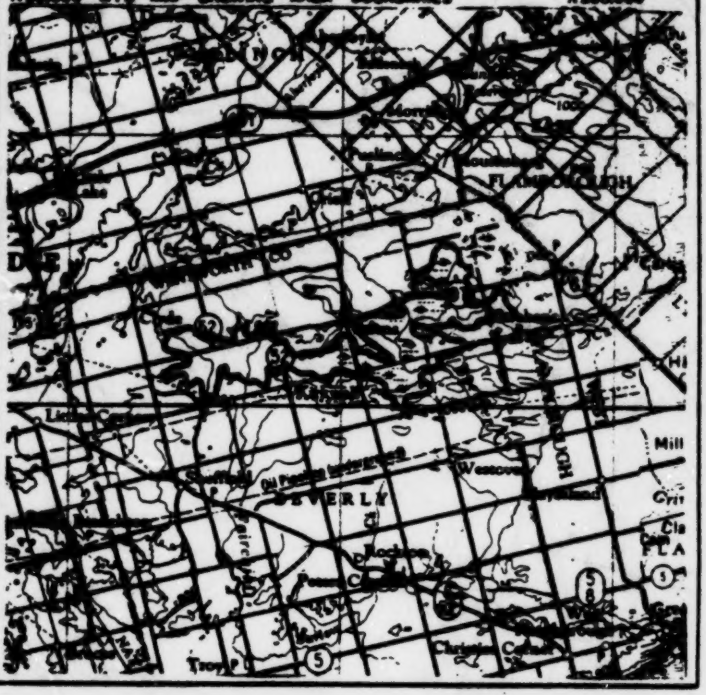
FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
L-1	6-1

MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
Central-Cambridge	Hamilton & Grand

AERIAL PHOTOGRAPHS
BASE MAP: 433801/434801

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	9	4325	48-58
1978	53	4326	328-339
1978	59	4327	138-144
1978	59	4328	191-193

1:50,000 NTS MAP SHOWING AREA BOUNDARIES



PHYSICAL AND BIOLOGICAL FEATURES
This site offers the best (eastern) representation of the lowland swamp forests and associated wetlands which predominate in Site District 6-1. Diverse wetland vegetation types reported for the site include silver maple swamp, cedar swamp, and pond communities. In addition, this site offers limited representation of upland (beech-maple) forest. The Beverly Swamp is one of the largest swamps remaining in southern Ontario, and is a large (1950 ha) continuous wetland. Disturbances to the site include dumping, ditching, logging, resource extraction, a recently constructed hydro corridor from north to south through middle of site and a gas pipeline through south end. Beverly Swamp is the headwater area for Bronte, Spencer and Fairchild Creeks, and because of its large size, is suitably buffered from adjacent land use impacts. Special features of the site, in addition to its large size and continuity, include the presence of a deer yard, coldwater streams, a heronry and the presence of many provincially and regionally rare species of plants and animals. These include Blanding's Turtle (Emydoidea blandingi), Virginia chain fern (Woodwardia Virginica), green violet (Hybanthus concolor), and oak fern (Gymnocarpuim dryopteris).

DATA SHEETS ATTACHED

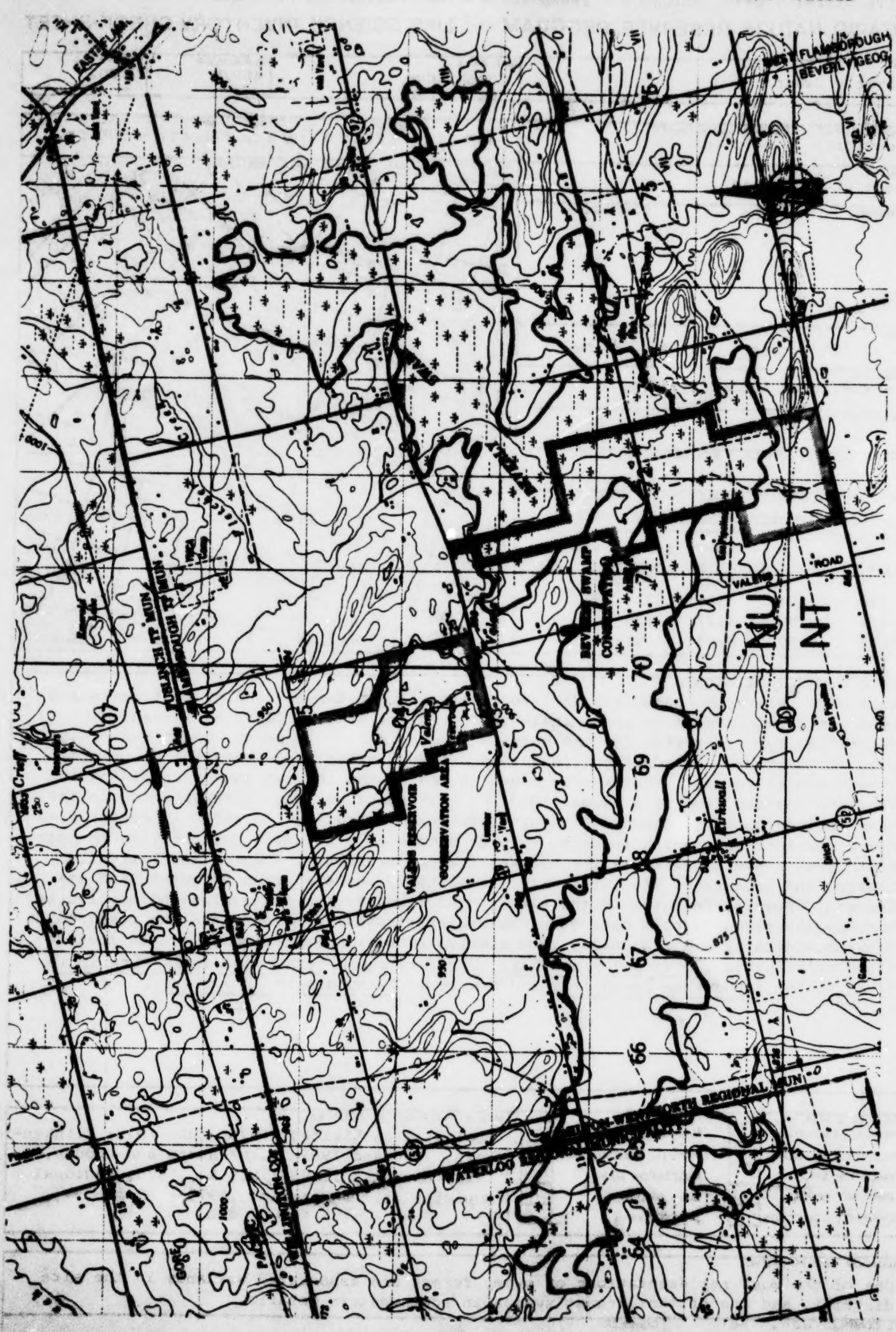
PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES
Ecologistics Limited, 1976; IBP, 1972; Klinkenberg, 1980 and 1982; Klinkenberg and Rhodes, 1980; MacMillan, 1982; M.N.R., 1976; Regional Municipality of Waterloo, 1975.

EVALUATION AND PRIORITIES
One of the best representations of swamp forest and associated wetlands in the site district, and one of the largest swamps in southwestern Ontario.

DATE COMPILED Jan. 1981	COMPILER
Revised Fall 1982	R. Klinkenberg

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3


WEST FLAMBOROUGH
BEVERLY GEOG
PUSLINCH TP MUN
FLAMBOROUGH TP MUN
BEVERLY SWAMP CONSERVATION AREA
VALENS RESERVOIR CONSERVATION AREA
Valens
VALENS ROAD
Kirkwall
Crieff
NU
NT
HAMILTON-WENTWORTH REGIONAL MUN
WATERLOO REGIONAL MUNICIPALITY
WELLINGTON CO.
GORE
PACIFIC
64
65
66
67
68
69
70
71
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ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Greenock Swamp	Walkerton	41A/3	700890

COUNTY, DISTRICT or REGIONAL MUNICIPALITY	LAT.	LONG.	ALT. MIN. - MAX.
Bruce	44° 09 'N	81 ° 22 'W	ca.900 ft. - 925 ft.

LOCALITY: 15 km west of Walkerton, along Teeswater River system

TOWNSHIP LOTS CONCESSIONS

AREA: ca. 20,000 acres ca. 8000 ha

OWNERSHIP

ADMINISTRATION

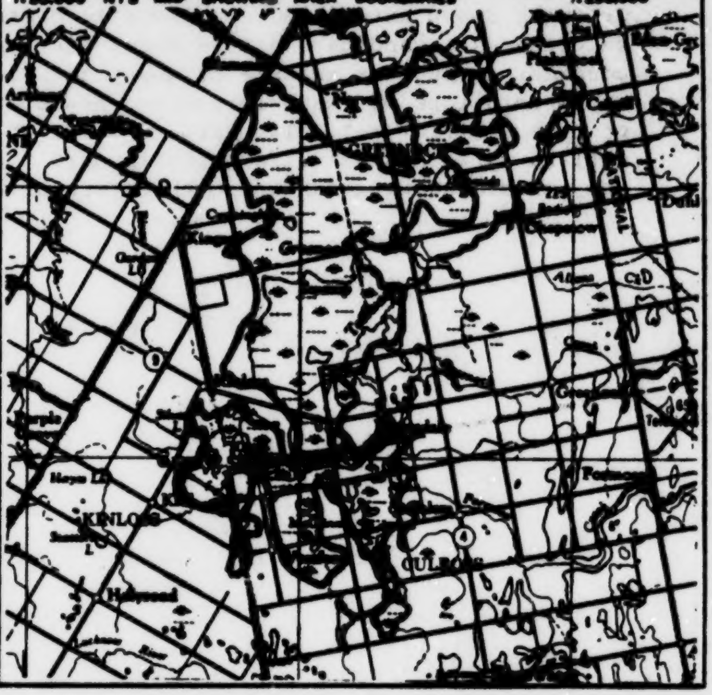
FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
L-1	6-2 & 6-1

MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
SW-O.S. & Wingham	Saugeen Valley

AERIAL PHOTOGRAPHS BASE MAP: 441812/442812

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	221	4403	33-34;36-40
1978	272	4404	45-54
1978	272	4405	113-121

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000



PHYSICAL AND BIOLOGICAL FEATURES

Greenock Swamp is one of the largest wetlands in southern Ontario. In addition to silver maple swamp, cedar swamp, thicket swamp and marsh, this site offers good representation of fen and bog communities (at McGlinn Lake and Harrison Bog centered at UTM 705766 and 710756), and limited representation of upland coniferous and deciduous forest. Vegetation types reported include pure white pine stands, oak stands, sugar maple-beech, hemlock stands, dead elm-willow thickets, cattail-rush marsh and fen with labrador tea and pitcher plant.

Disturbances to the site include logging, fire, grazing, dumping, drainage ditches, road construction and introduction of non-native species. Some portions are currently for sale, while sections of the site are maintained by the conservation authority as a "nature preserve". The road widening to the south of the site which was in progress during field work at this site may have adverse impacts on the Harrison Bog.

The Greenock Swamp is a valuable water retention and groundwater recharge area and is a headwater area for several streams feeding into the Teeswater River. Its large size provides buffer against impact from adjacent land use practices and makes it one of the largest remaining forests in southwestern Ontario. In addition to its large size and continuity, the special features of this site include an active deer yard, its

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES

Hanna, 1980; Hilts and Parker, 1980; Hoffman et al, 1981; IBP, 1971; King, 1975; Klinkenberg, 1980; Klinkenberg and Rhodes, 1980; Lobsinger, 1970; M.N.R., 1976; Saugeen Valley C.A., 1979.

EVALUATION AND PRIORITIES

One of the best swamp forests and associated wetlands in southwestern Ontario and in Site Districts 6-1 and 6-2.

DATE COMPILED	COMPILER
Dec. 1980 Revised Fall 1982	R. Klinkenberg and R. Hanna

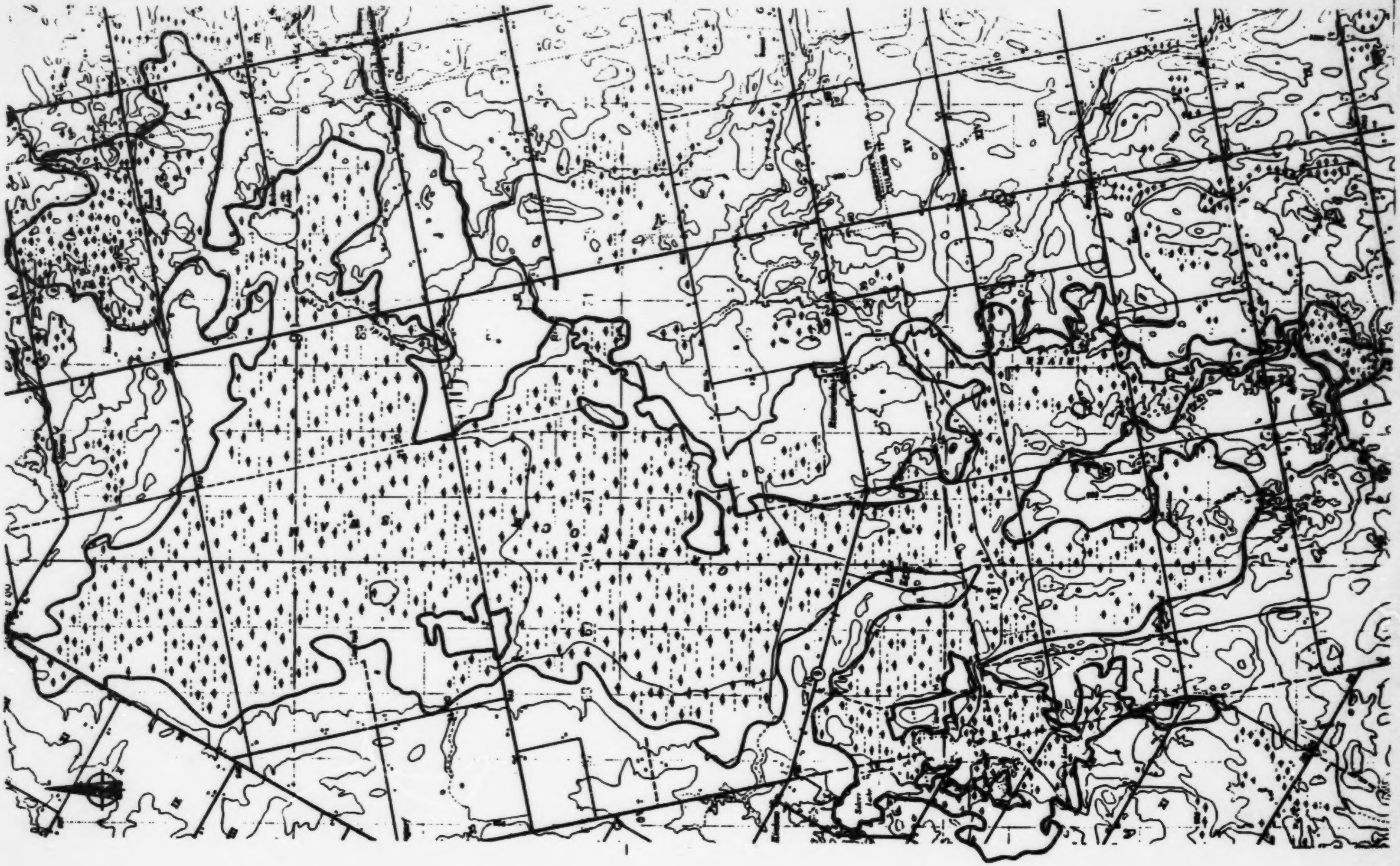
function in providing migratory stopover and nesting habitat for waterfowl, and its support of significant wildlife populations.

Greenock Swamp extends across two site districts (6-2 and 6-1) and was selected as a candidate nature reserve by each site district study. It was considered the best example of swamp in Site District 6-2 and one of the best representations of swamp forest and associated wetlands in the western portion of Site District 6-1. Its large size, hydrological value and diversity of wetland types and wildlife habitats make this one of the best swamp forests and associated wetlands in southwestern Ontario.

AERIAL PHOTOGRAPHS cont'd

1978	269	4406	110-118
1978	240	4407	117-122
1978	263	4409	27-33
1978	263	4410	134-138
1978	261	4411	24-32
1978	261	4412	121-129
1978	235	4413	21-24; 28-31
1978	235	4414	118-120; 123-126

Greenock Swamp 41A/3 700890



SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Saratoga Swamp	Lucknow	40P/13	530510

COUNTY, DISTRICT or REGIONAL MUNICIPALITY	LAT.	LONG.	ALT. MIN. MAX.
Huron	43 °48 'N	81 °35 'W	ca.875 ft. - 1000 ft.

LOCALITY
10 km northeast of Goderich

TOWNSHIP LOTS CONCESSIONS

AREA
ca. 2900 acres ca. 1200 ha

OWNERSHIP
private/Maitland Valley C.A.

ADMINISTRATION

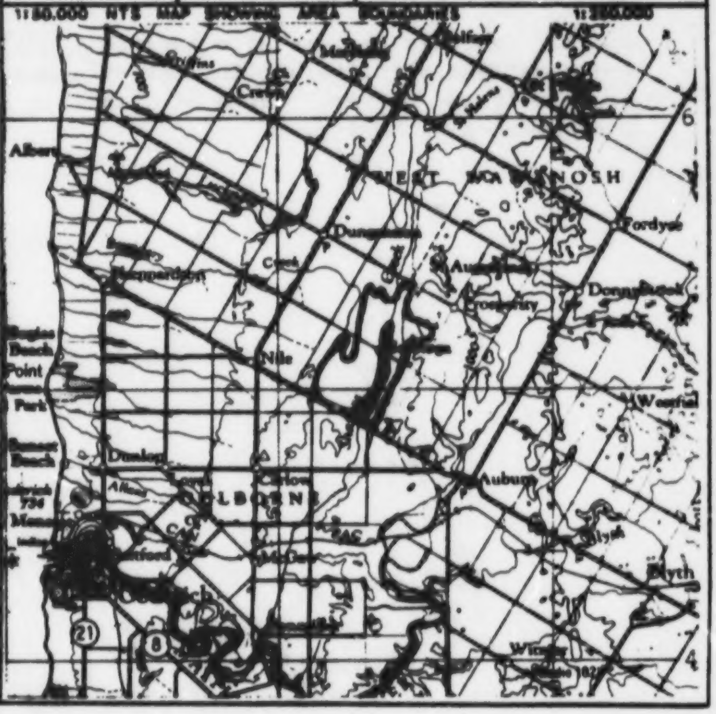
FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
L-1	6-1

MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
SW-Wingham	Maitland

AERIAL PHOTOGRAPHS BASE MAP: 437813

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	245	4355	13, 14
1978	245	4356	221-224
1978	245	4357	153-156
1978	245	4358	84-86

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000



PHYSICAL AND BIOLOGICAL FEATURES

Saratoga Swamp was chosen to complete the representation of lowland swamp forests in Site District 6-1. It complements the representation of swamp forests and associated wetlands offered by Beverly and Greenock Swamps in that it offers extensive examples of young to medium-aged silver and red maple swamp forest.

The diversity of the site is expressed by the occurrence of various wetland vegetation types including conifer swamp (cedar-tamarack), slope forest (cedar-hemlock), successional communities and thickets (including an alder-chokeberry-leatherleaf-blueberry thicket). In addition to offering additional representation of swamp forest and associated wetlands in the site district, this site offers limited but good representation of upland forest - a vegetation type not well represented in the site district. These uplands are dominated by sugar maple in association with American beech, black cherry and basswood.

Disturbances noted on the site include some resource extraction and logging, but otherwise the area appears intact and undisturbed. Some portions are currently for sale.

DATA SHEETS ATTACHED
- PHYSICAL DESCRIPTION ☐
- VEGETATION SUMMARY ☐
- EVALUATION SHEET ☐
- COMMUNITY DESCRS. ☐
- COMMUNITY COMP. LISTS ☐
- SUMMARY SPECIES LISTS ☐
- PHYSICAL FEATURES MAP ☐
- VEGETATION MAP ☐
- BIBLIOGRAPHY ☐
- PHOTOGRAPHS ☐

MAJOR INFORMATION SOURCES
Cuddy, 1976; IBP, 1972; Klinkenberg, 1980 and 1982; Klinkenberg and Rhodes, 1980; M.N.R., 1976.

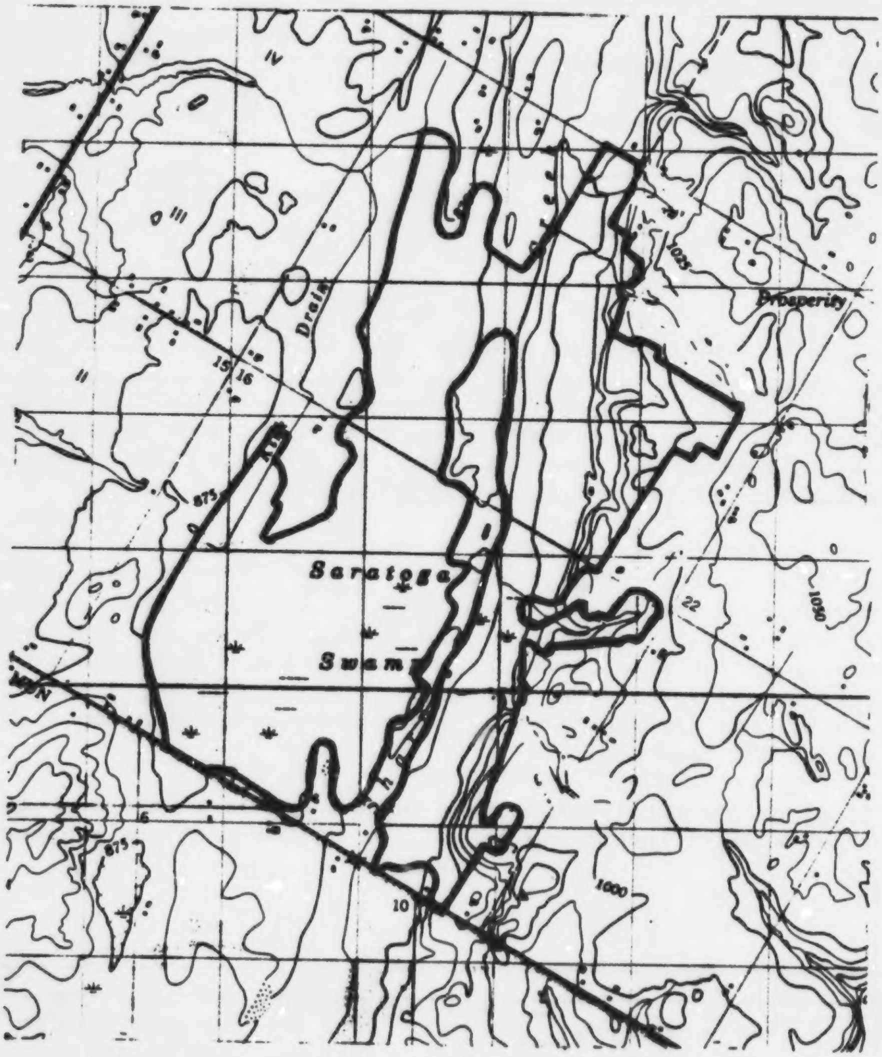
EVALUATION AND PRIORITIES One of the best three swamp forests in Site District 6-1 offering representation of young to intermediate silver and red maple swamp with pockets of upland beech-maple forest.

DATE COMPILED	COMPILER
Jan. 1981 Revised Sept.1982	R. Klinkenberg

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario. M7A 1W3

Headwaters of two creeks originate in the swamp-Sharpes Creek and Boundary Creek.

Special features of this site include a coldwater trout stream, a deer yard and excellent wildlife habitat for such species such as porcupine, raccoon, brush wolf and beaver. Parts of this site are owned by the Maitland Valley Conservation Authority.



SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Beverly Swamp	40P/8	720025

BRIEF DESCRIPTION

A 1950 ha wetland of predominantly swamp forest which shows boreal and southern influences. Reported vegetation types include cedar swamp, silver maple swamp, treed bog, pond communities and pockets of beech-maple forest. This site is the headwaters for Bronte, Spencer and Fairchild Creeks. Disturbances to the site include dumping, ditching, logging and resource extraction. Special features include a deer yard, coldwater streams, and a heronry. A candidate nature reserve.

SOURCES

IBP: Regional Municipality of Waterloo, 1974; Ecologistics, 1976; Klinkenberg, 1980 & 1982; Klinkenberg and Rhodes, 1980.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
September 30, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO. M7A 1W3

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Greenock Swamp	41A/3	700890

BRIEF DESCRIPTION

A 8,000 ha swamp, 2/3 of which lies in Site District 6-2. Primarily silver maple swamp. Other vegetation types include fen, cedar swamp, upland coniferous and deciduous woods, lowland coniferous swamp, thicket swamp and cattail marsh. Headwater area for several streams, valuable water retention/groundwater re-charge area. Disturbances include logging, fire, grazing, dumping, draining, plantations, and road widening. Portions for sale in 1980. Includes McGlinn L.S Harrison Bog. A candidate nature reserve.

SOURCES

IBP; MNR, 1976; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982; Hoffman et al. 1981.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
October 1, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO. M7A 1W3

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Saratoga Swamp	40P/13	530510

BRIEF DESCRIPTION

A 1200 ha young to medium-aged red maple-cedar swamp forest with some representation of upland beech-maple woods. Headwaters for Sharpes Creek and Boundary Creek. Resource extraction and logging are ongoing, but the site appears relatively intact and undisturbed. Portions currently for sale. Special features include deer yards, and coldwater trout streams. The site is partly owned by the Maitland Valley C.A. A candidate nature reserve.

SOURCES

IBP, 1972; MNR, 1976; Klinkenberg, 1980; Klinkenberg, 1980 and 1982; Cuddy, 1976.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
October 2, 1980			Klinkenberg, 1980 Revised 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO. M7A 1W3

SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

	x	Ellice-Huckleberry Swamp	40P/7	040140

A 610 ha wetland complex supporting permanent and intermittent swamps. Vegetation communities include closed and semi-open mature deciduous swamp forest (elm-aspen-willow; aspen-willow); semi-open shrub wetland (willow-leatherleaf); heath bog (chokecherry-leatherleaf-sphagnum), and old field. Special features include rare plants (Bartonia virginica, Betula pumila), rare birds (Golden-winged Warbler, Yellow-breasted Chat). The existing bog is partly in plantation and peat removal is ongoing. Disturbances to the site include past logging, some draining for agriculture and planting of black spruce and tamarack. Site is headwater area for tributaries of the Thames and Nith Rivers.

IBP, 1971; Hoffman et al, 1981; MNR, 1976; Klinkenberg, 1980 and 1982; Klinkenberg and Rhodes, 1980.

October 1, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD — ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Fletcher Creek Swamp Forest	40P/8	720065

A 690 ha cedar swamp forest with sedge meadows and tamarack bog. Later successional stages of black ash, elm, willow, white birch are present. The "Crieff bog" sedge meadow supports many rare species, including Habenaria clavellata, Cypripediumarietinum, Arethusa bulbosa. Sections previously cleared for agriculture are now abandoned. Ongoing resource extraction adjacent to site. Adjacent land development. Headwaters of Spencer Creek. It is linked by Beverly Swamp.

Eagles et al, 1976; Ecologistics Limited, 1976; Klinkenberg and Rhodes, 1980.

Sept. 30, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD — ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Blue Springs Creek Wetlands	40P/9	730285

A ca. 180 ha site in the Blue Springs Creek Valley which supports a tamarack-spruce-cedar bog with associated fen and marl ponds. A relatively undisturbed white cedar forest occurs on the bottomlands and adjacent valley slopes. This site is a groundwater recharge and storage area. Special features include a trout stream and reported deer yard. Disturbances in vicinity include snowmobile trails, logging.

Klinkenberg, 1982; MNR, 1976; Regional Municipality of Halton, 1978; IBP.

			Klinkenberg, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD — ONTARIO MINISTRY OF NATURAL RESOURCES

SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

	x	Knatchbull Swamp	40P/9	750245

A 350 ha mature red maple-silver maple swamp mixed with cedar swamp on till moraine. Vegetation types include mixed upland forest (sugar maple-beech-hemlock-black cherry);mixed lowland forest (red maple-yellow birch-black ash-hemlock-balsam) (black ash-willow-dogwood-larch-white cedar); pond communities. A groundwater recharge area and wetland storage area. Headwaters for Blue Springs Creek. Disturbances include presence of auto wreckers, land development.

Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982; Regional Municipality of Halton, 1978.

Sept. 29, 1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

About 6 km south of Acton.

	x	Brookville Swamp	40P/9	770220

A ca. 200 ha mature swamp forest of silver maple-red maple-balsam poplar-cedar which is representative of the site district. The diversity of the site is enhanced by the presence of pockets of upland forest (sugar maple-ash-white pine) and hawthorn thickets with some open field. The swamp probably serves as a water storage/groundwater recharge area. Parts of the site have been included in a wildlife extension program between the landowner and MNR. About 9 km south of Acton.

Regional Municipality of Halton, 1978; Klinkenberg, 1980 and 1982; Tant et al, 1977.

			Klinkenberg 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Phillipsburg Swamp	40P/7	185085

A 310 ha mature silver maple swamp on kame moraine (spring swamp and perennial swamp). Vegetation types include beech-maple upland woods and hemlock-yellow birch communities, with large sections of secondary growth. Disturbances to the site include logging and dumping, with disturbance most apparent in the eastern section. Headwaters for a tributary of the Nith River. Special features include an active heronry (1980); rare fauna (only regional occurrence of red-backed vole).

Regional Municipality of Waterloo, 1975; Klinkenberg, 1980 and 1982; Klinkenberg and Rhodes, 1980; Cuddy, 1976.

October 1, 1980			Klinkenberg,1980 Revised 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

	x	North Woolwich Swamp	40P/10 (Also on 40P/9)	404300

A 320 ha unbroken swamp forest on spillway with small pockets of sugar maple woods, mixed forest, tamarack swamp, cedar swamp. The site offers some boreal representation (black spruce). Disturbances include past logging and grazing. This site is the headwaters of several streams and is located near several other natural areas. Special features include a deer yard, and rare plant species.
8 km southwest of Elora.

Regional Municipality of Waterloo, 1974; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982; MNR, 1976.

October 1, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Ament and Pollard Tract	40P/11	760400

A 405 ha swamp forest (red-silver maple) on undrumlinized till plain and till moraine with small sections of upland forest (sugar maple-cherry) and areas of plantation. Other vegetation present includes cedar-willow swamp, yellow birch-cedar-hemlock, red ash-basswood-aspen communities. Well buffered. A headwater area for a tributary of Middle Maitland River. Disturbances include hunting, the presence of non-native species such as European buckthorn and plantations.

MNR Sensitive Areas Report, 1976; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982.

October 1, 1980			Klinkenberg, 1980 Revised 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Galt Creek (Hill Creek) and Forest	40P/8	620060

A ca. 800 ha lowland mixed and coniferous swamp forest (cedar) (red maple-white cedar) (willow-alder) with some representation of upland (beech-maple) forest with ash and white pine and an area of old field growth. The creek which flows through the site is reported as important for maintaining the hydrological balance. Significant species reported on the site include Cypripedium reginae, Lycopodium complanatum, Viola renifolia. 6 km northeast of Galt.

Eagles et al, 1976; Klinkenberg, 1980 and 1982.

			Klinkenberg, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

	x	Brisbane Woods	40P/9	770420

A 540 ha swamp forest on till moraine. Wetland communities present include dogwood shrub thickets; cedar-balsam-tamarack; tamarack stands; white cedar-aspen-balsam; balsam-white spruce-cedar; willow thickets, alder thickets. The swamp forest and beaver ponds are surrounded by rolling uplands of beech-maple forest. The headwaters of 2 small streams and a groundwater recharge area. Connected by a vegetation corridor to Eramosa River Valley. Disturbances include logging, road widening, grazing, land development, resource

Ecologistics Limited, 1979; Klinkenberg and Rhodes, 1980; MNR, 1976; Klinkenberg, 1980 and 1982.

September 29,1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

extraction. Several significant species are present including Moneses uniflora and Hydrophyllum canadense.

	x	Mountsberg Wildlife Centre	40P/8	770120

A 370 ha deciduous-coniferous swamp forest and associated marsh and thicket communities on limestone plain. Other vegetation types include old field and plantations. This site is located near other natural areas and has good buffer around prime wetland areas. Presently managed; land development and resource extraction ongoing. Special features include waterfowl concentrations, presence of significant species (blue-spotted salamanders; bluebirds, golden-winged Warblers), and an endangered species (West Virginia White Butterfly).

Ecologistics Limited, 1976; Eagles et al, 1979; Sharp, 1980; Paton and Sharpe, 1979.

September 30,1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Roseville Swamp	40P/8	460000

A 250 ha silver-red maple swamp forest on spillway which also supports sugar maple-hemlock stands, stream communities, tamarack swamp, cattail pockets, willow thickets and sphagnum bog. Headwater for Cedar Creek; water storage-recharge area. Special features include a deer yard, and rare flora and fauna (Orchis spectabilis, Petasites palmatus, Dalibarda repens, Spiranthes romanzoffiana, Pickerel Frog). Logging is evident and a plantation is present. This site is a headwater area for Cedar and Blair Creeks.

Regional Municipality of Waterloo,1974 & 1978; Biggley et al; Dorney et al,1970;MNR,1976;Klinkenberg & Rhodes,1980;Klinkenberg,1980 & 1982.

October 1, 1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

	x	Phillipsburg Forest	40P/7	230060

A 310 ha floodplain forest (black maple-ash-hickory)on kame moraine, spillway and undrumlinized till plain, with transition to upland sugar maple-hemlock, beech-maple and oak forests. Special features include rare flora (*Arisaema dracontium*), *Onosmodium hispidissimum*, *Erythronium albidum*). A hydro corridor transects the site; trampling is evident and a sugar shack is present. The site is a headwater area for small tributaries of the Nith River.

Regional Municipality of Waterloo, 1974; MNR, 1976; Klinkenberg, 1980 and 1982; Klinkenberg and Rhodes, 1980.

October 1, 1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD	ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Turnberry Swamp	40P/14	710630

A 1012 ha red-silver maple swamp and cedar swamp on spillway, kame moraine and drumlinized till plain, with small sections of sugar maple uplands and sections of white pine plantation. Plant communities present include red maple-ash-hemlock-cedar, tamarack-poplar, white birch-aspen, sugar maple-beech, cedar stand. The site is located close to other natural areas. Extensive ditching has occurred in the past. Plantations are present. 4 km northwest of Wingham.

MNR, 1976; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982; Hoffman et al. 1978.

October 1, 1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD	ONTARIO MINISTRY OF NATURAL RESOURCES

	x	Westfield Swamp	40P/14	630480

A 32 ha red-silver maple swamp forest on spillway within morainic hills with a small section of upland woods. Vegetation communities include black ash-red maple-yellow birch, sugar maple-red maple-yellow birch, beech-sugar maple-cherry. Site is a headwater area for a tributary of the Maitland River. It is located near other natural areas and has been grazed and logged in the past. Hunting is ongoing. 16 km southwest of Wingham.

IBP; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982.

October 2, 1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD	ONTARIO MINISTRY OF NATURAL RESOURCES

SITE DISTRICT 6-1: WETLANDS - Swamp Forests and Associated Wetlands

	x	Hay Swamp	40P/5	540020

A 1500 ha lowland swamp forest on spillway supporting small sections of sugar maple bush with lowland (red maple swamp) forest and associated wetlands predominating. Communities present include red maple, black ash, trembling aspen-red maple. Site is an important water storage area and contains the headwaters for Black Creek, a tributary of the Ausable River. Disturbances include logging, grazing, plantation. 16 km ENE of Grand Bend.

CWS (London) wetland files; Ausable-Bayfield C.A,1981; Schlegal and Martindale,1974;MNR,1976;Klinkenberg & Rhodes,1980;Klinkenberg,80&82

October 2, 1980			Klinkenberg,1980

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

SITE DISTRICT 6-1: WETLANDS - Kettle Lakes and Bogs

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Spongy Lake Bog	Stratford	0P/7	295070

COUNTY, DISTRICT or REGIONAL MUNICIPALITY	LAT.	LONG.	ALT. MIN. MAX.
Regional Municipality of Waterloo	43 °25 'N	80 °38 'W	ca.1175 ft. - 1250 ft.

LOCALITY
3 km northeast of Baden

TOWNSHIP **LOTS** **CONCESSIONS**

AREA
200 acres 80 ha

OWNERSHIP

ADMINISTRATION

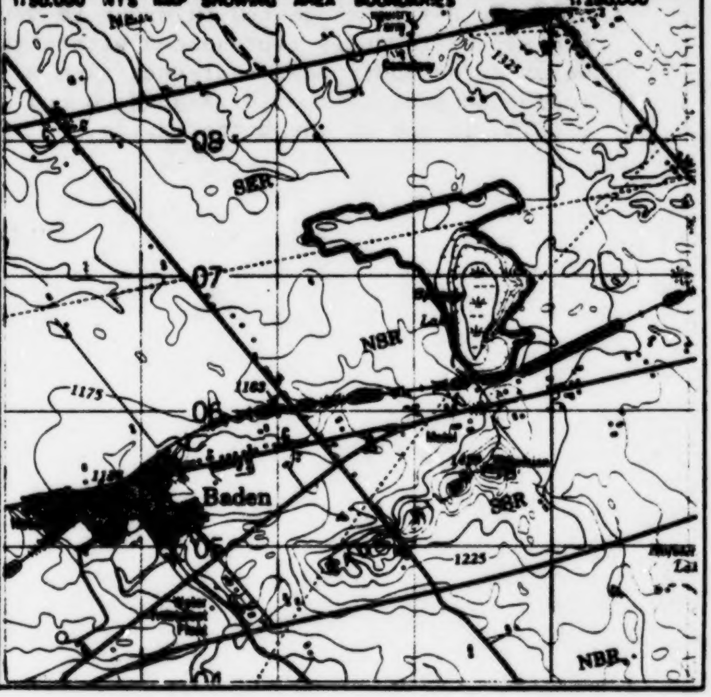
FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
L-1	6-1

MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
Central-Cambridge	Grand

AERIAL PHOTOGRAPHS BASE MAP: 434802

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	44	4329	156-158

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000



PHYSICAL AND BIOLOGICAL FEATURES

This ca. 80 ha kettle bog, located in a large kettle depression, offers good representation of bog vegetation. Bog and related wetland vegetation types reported include tamarack fen; tamarack-black spruce bog; water willow shrub carr; white cedar swamp; and cedar-red maple swamp. In addition to wetland representation, this site offers additional limited representation of upland (maple-beech) forest, a feature which is not well represented in the site district.

Disturbances to the site include logging, reforestation, some grazing and two hydro corridors - one dissects the upland forest north of the kettle and the other runs along the south and east edge. The surrounding forested and plantation areas provide some buffer from adjacent land use.

Special features of the site include the presence of several rare species of flora (Panax quinquefolius, Acorus calamus), and rare fauna (Le Conte's Sparrow and Bog Copper Butterfly). This site is used extensively for scientific study and teaching, particularly by nearby universities in Waterloo.

Spongy Lake Bog was chosen as the best representation of kettle bog features in the site district. Some bog representation is also offered by Harrison Bog, which is

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION	☐	SUMMARY SPECIES LISTS	☐
VEGETATION SUMMARY	☐	PHYSICAL FEATURES MAP	☐
EVALUATION SHEET	☐	VEGETATION MAP	☐
COMMUNITY DESCRS.	☐	BIBLIOGRAPHY	☐
COMMUNITY COMP. LISTS	☐	PHOTOGRAPHS	☐

MAJOR INFORMATION SOURCES
MNR, 1976; Regional Municipality of Waterloo, 1974 and 1978; Klinkenberg, 1980 and 1982; IBP, 1970.

EVALUATION AND PRIORITIES
Spongy Lake is a good example of a kettle bog with associated wetland vegetation and some upland forest.

DATE COMPILED	COMPILER
Fall, 1982	R. Klinkenberg

part of Greenock Swamp (41A/3 705795). Further study of bogs in Site District 6-1 is suggested in order to determine if bog vegetation and bog types are fully represented within these two sites. Other sites which offer additional representation of bog features are listed on the following pages. The St. Augustine Bog and Swamp Forest (40P/13 590570) is one of the better areas.

	x	Spongy Lake Bog	40P/7	295070

An 80 ha kettle lake with bog representation. Vegetation types include tamarack fen, white cedar swamp; mixed lowland swamp; tamarack-black spruce; maple-beech uplands. Special features include rare species (ginseng, sweet flag, breeding LeConte's Sparrow, Bog Copper Butterfly). Disturbances include logging, reforestation, some evidence of grazing and adjacent hydro lines. The area is used extensively for scientific study. A candidate nature reserve.

IBP; Regional Municipality of Waterloo, 1974 and 1978; MNR, 1976; Klinkenberg, 1980 and 1982.

Klinkenberg,1980
Revised 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

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	x	St. Augustine Bog and Swamp Forest	40P/13	590070

A 204 ha privately-owned bog and swamp forest. Vegetation associations reported include wetlands (tamarack-red maple-leatherleaf; leatherleaf-willow-cattail;red maple-aspen-white cedar), and uplands (beech-maple-white pine). Good buffer present; good example of peatland bog and swamp development in intermoraine basin. Disturbances include past cultivation; present logging, grazing, lumbering; and an active township dump in northeast section. Further study of the bogs in this site district could result in the selection of this site as a candidate nature reserve.

IBP; Waldron, 1972; Cudd., 1976; MNR SA; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982.

October 1, 1980

Klinkenberg,1980
Revised 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

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	x	Oil Well Bog-Little Tract	40P/8	610115

A 338 ha late stage heath and black spruce bog supporting 4 bog forms (leatherleaf-sphagnum; spruce-tamarack), swamp (aspen-red maple-elm; willow thickets), upland woods (sugar maple-beech-hemlock), old fields, marsh and ponds. Disturbances include logging, roadway. Used extensively by schools and universities. This site requires field checking. Further study of the bogs in this site district might result in the selection of this site as a candidate nature reserve.

MNR, 1976; Dorney et al, 1970; Hamilton Federation of Environmental Groups; Biggley et a, 1972; Klinkenberg, 1980 and 1982; IBP.

Klinkenberg,1980
Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

SITE DISTRICT 6-1: WETLANDS - Kettle Lakes and Bogs

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	St. Clements Sphagnum Bog	40P/10	257174

SHORT DESCRIPTION

A ca. 25 ha closed bog forest (cedar-tamarack-black spruce) with sphagnum mat, surrounded by a silver maple swamp. Typical bog species present include black spruce, Labrador tea, pitcher plant, pale laurel, round-leaved sundew and mistletoe. Rare species present include the grasses Sphenopholis intermedia and Agrostis hyemalis. Disturbances include recent draining.

SOURCES

MNR, 1976; Regional Municipality of Waterloo, 1978 and 1974; Klinkenberg, 1980 and 1982.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
September 29,1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO. M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Puslinch Lake Bog and Wetlands	40P/8	590070

SHORT DESCRIPTION

A 94 ha kettle lake with various vegetation types present including a black spruce bog; swamp forest (white cedar-tamarack-white birch; red maple-yellow birch-silver maple); shrub wetlands (willow winterberry; cedar-willow); upland forest pockets (sugar maple--beech-hemlock; oak-aspen-black cherry). Special features include a deer yard; rare fauna (Four-toed Salamander and Blanding's Turtle). Disturbances include trailer park, marina, some cultivation, logging and grazing. Owned by Grand River C. A.

SOURCES

MNR, 1976; Eagles et al, 1976; Klinkenberg, 1980 and 1982; Klinkenberg, 1980.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
September 29,1980 July 16, 1982			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO. M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Bamberg Swamp and Bog Lake	40P/7	258155

SHORT DESCRIPTION

A kettle lake surrounded by forest and boggy swamp in sand hills. Some dyking and ditching have occurred in the northeast. Significant water recharge/storage area. Significant species include Viola renifolia, Cypripedium reginae, Solidago uliginosa.

SOURCES

Regional Municipality of Waterloo, 1974 and 1978; Klinkenberg, 1980 and 1982.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
			Klinkenberg,1980

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR, WHITNEY BLOCK, QUEEN'S PARK, TORONTO. M7A 1W3

1981

SITE DISTRICT 6-1: WETLANDS - Kettle Lakes and Bogs

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Little Lakes Bog & Swamp Forest Complex	40P/7	065020

SITE DESCRIPTION

A 135 ha complex of 3 kettle lakes and swamp forest with the following communities types: open water, floating sphagnum mat, cattail pockets, tamarack swamp, silver maple swamp, hemlock-cedar swamp, some beech-maple forest. The second lake is divided in two by fill and is now regenerating. The third lake is separated from the others by a highway and railway corridor, the swamp forest is separated by a hydro corridor. The Avon River flows through the woods.

SOURCES

Hoffman et al, 1981

FIELD SURVEY DATES	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD	ONTARIO MINISTRY OF NATURAL RESOURCES PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION 3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

1981

SITE DISTRICT 6-1: RIVER VALLEY SYSTEMS

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

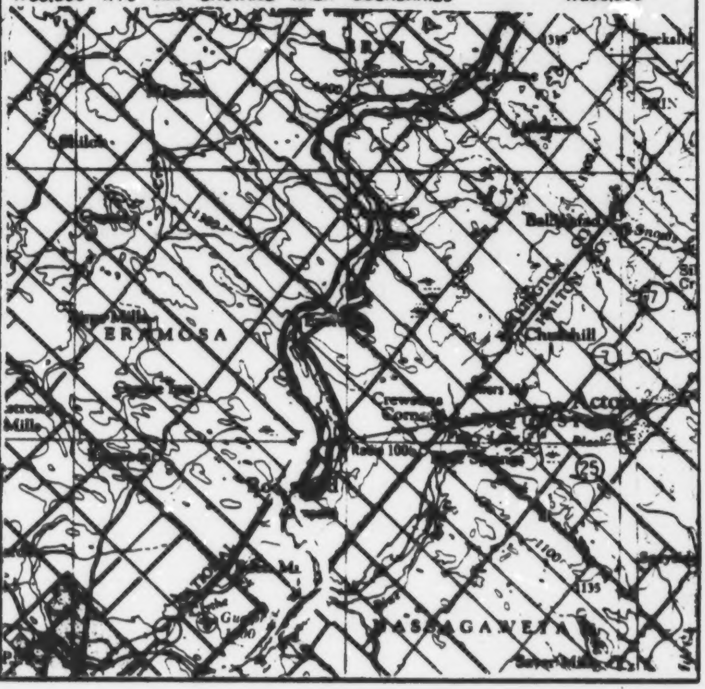
NAME	MAP NAME	MAP NUMBER	UTM REF.
Eramosa River Valley	Guelph	40P/9	685345

COUNTY, DISTRICT or REGIONAL MUNICIPALITY	LAT.	LONG.	ALT. MIN. MAX.
Wellington and Halton	43° 40' N	80° 09' W	ca. 1025 ft.-1350 ft.

LOCALITY: 12 km NE of Guelph, along Eramosa River between Rockwood & Brisbane

TOWNSHIP LOTS CONCESSIONS

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000



AREA: ca. 5000 acres ca. 2040 ha

OWNERSHIP: Grand River C.A./private

ADMINISTRATION

FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
L-1	6-1

MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
Central-Cambridge	Grand River

AERIAL PHOTOGRAPHS

BASE MAP: 435801

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	89	4342	83,84
1978	90	4343	218-220
1978	90	4344	74, 75

PHYSICAL AND BIOLOGICAL FEATURES

A river valley system with high quality sections of braided stream, gravel terraces, rapids and limestone potholes. This site offers a high diversity of wetland vegetation types including floodplain forest (cedar swamp, alder thickets, black ash-elm swamp) small marsh communities (wild rice, cattails) and cedar island wetlands (cedar-fern-moss). Other vegetation types include upland deciduous forest (beech-maple) on valley slopes and rim, meadows and old fields.

Special features of the site include a deer yard, and rare species of flora and fauna - breeding Mourning Warbler, breeding Eastern Goshawk, walking fern (Camptosorus rhizophyllous) and purple cliffbrake (Pellaea atropurpurea) and an endangered species (West Virginia White Butterfly). In addition, this site offers a good example of karst topography, and an unlogged, virtually undisturbed, cedar island community.

Disturbances to the site include housing developments, agriculture, resource extraction, trampling along foot paths and several dams. Numerous roadways dissect the river corridor, while the Rockwood portion of the site receives heavy public use.

DATA SHEETS ATTACHED

- PHYSICAL DESCRIPTION ☐
- VEGETATION SUMMARY ☐
- EVALUATION SHEET ☐
- COMMUNITY DESCRS. ☐
- COMMUNITY COMP. LISTS ☐
- SUMMARY SPECIES LISTS ☐
- PHYSICAL FEATURES MAP ☐
- VEGETATION MAP ☐
- BIBLIOGRAPHY ☐
- PHOTOGRAPHS ☐

MAJOR INFORMATION SOURCES

Biggley et al 1972; Chapman and Putnam, 1973; Eagles et al, 1976; IBP, 1976; Klinkenberg, 1980 and 1982; Klinkenberg and Rhodes, 1980; MNR, 1976.

EVALUATION AND PRIORITIES

One of the best river valley systems in Site District 6-1, offering a high diversity of river valley vegetation types.

DATE COMPILED	COMPILER
Dec. 1980 Revised Fall 1982	R. Klinkenberg

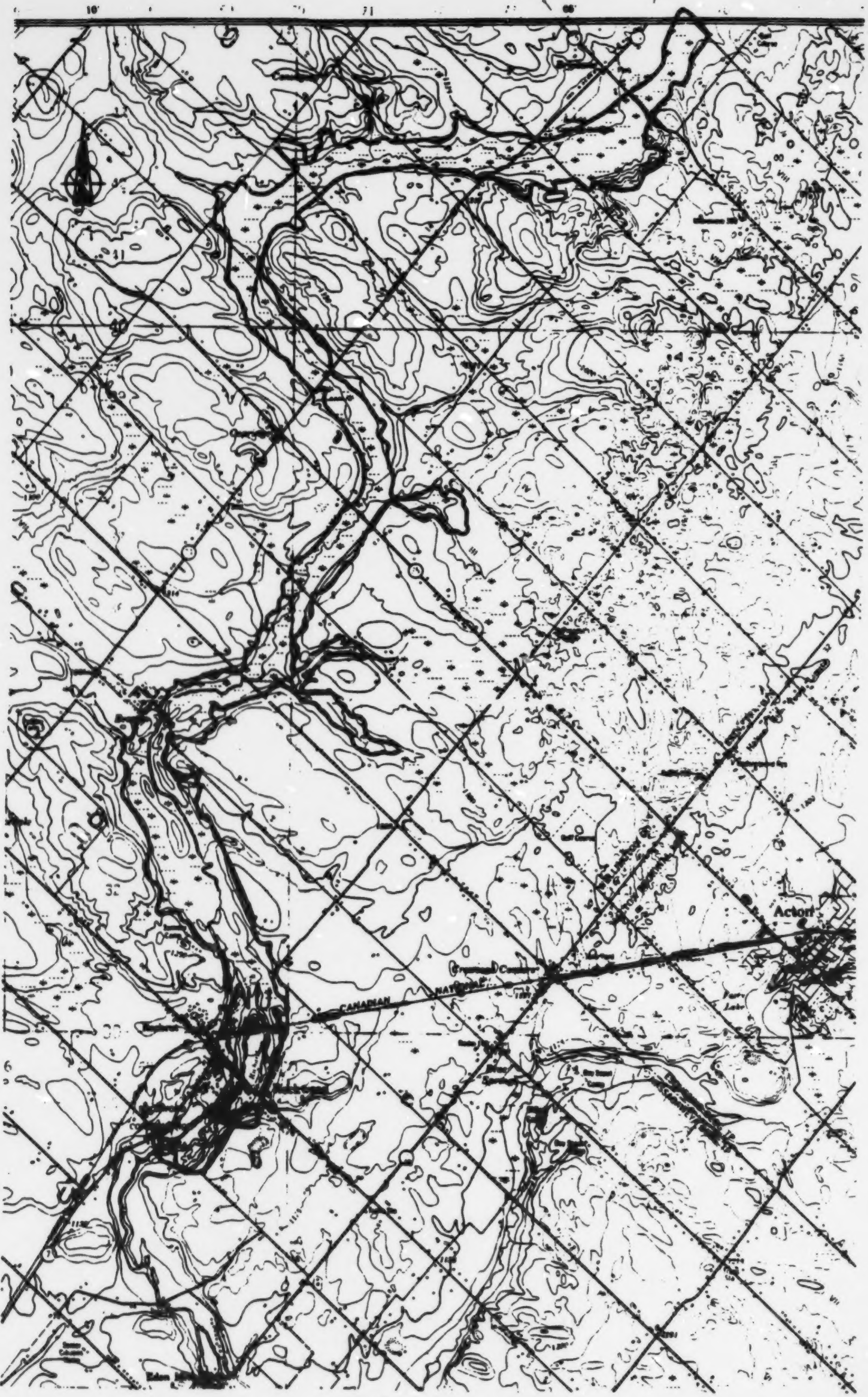
Eramosa River Valley 40P/9 685345

This site includes within its boundaries the Everton Cedar Swamp (centered at 685345) and the Rockwood Limestone Caves (at UTM 640285). Even though it is quite disturbed, a 2 km section along the river north of Rockwood has been included within the candidate nature reserve to connect the Rockwood Conservation Area with the river valley lying to the north. This connection corridor is marked on the map with a dashed line. This site also includes an historic site and a municipal park, with a scout camp located near Everton. Everton is the site of a proposed dam.

The Eramosa River Valley is one of the two best examples of river valley systems in Site District 6-1. It complements the features found at the Bayfield River (40P/12 480230) and offers additional representation of floodplain forests and upland forests on valley slopes and rims. It offers particularly good representation of wet to mesic cedar communities.

AERIAL PHOTOGRAPHS cont'd
ADDITIONAL BASEMAPS:
436801/437801

1978	54	4345	192-194
1978	69	4346	21-24
1978	54	4347	19-21
1978	175	4348	128, 129
1978	170	4349	119-121
1978	167	4350	146, 147
1978	69	4351	62-69
1978	62	4352	114-116
1978	52	4353	287, 288



Eramosa River Valley 40P/9 685345

ONTARIO NATURE RESERVES PROGRAM - LIFE SCIENCE INVENTORY CHECK-SHEET

NAME	MAP NAME	MAP NUMBER	UTM REF.
Bayfield River	Goderich	40P/12	480230

COUNTY, DISTRICT or REGIONAL MUNICIPALITY	LAT.	LONG.	ALT. MIN. MAX.
Huron	43 °34 'N	81 °40 'W	ca. 625 ft.-850 ft.

LOCALITY Section along Bayfield River upstream from Bayfield

TOWNSHIP LOTS CONCESSIONS

AREA 2100 acres 850 ha

OWNERSHIP

ADMINISTRATION

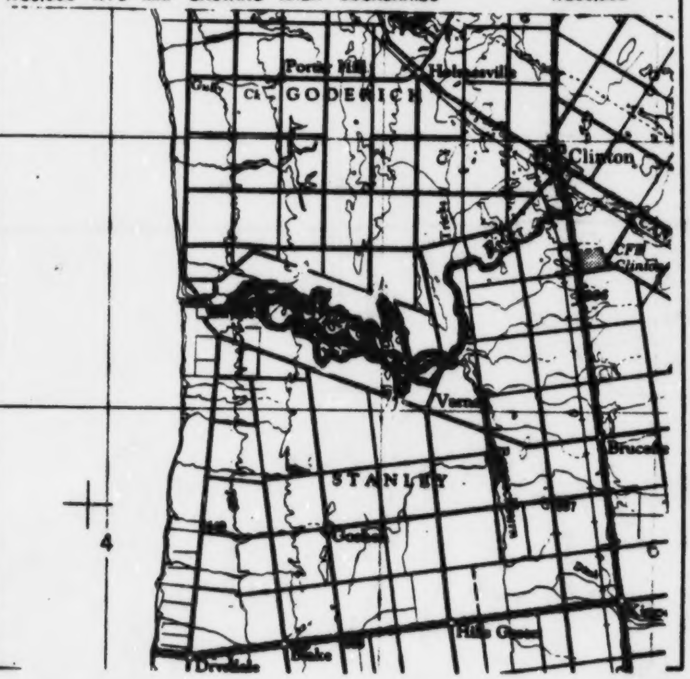
FOREST REGION AND DISTRICT	SITE REGION AND DISTRICT
	6-2 and 6-1

MNR REGION AND DISTRICT	CONSERVATION AUTHORITY
SW-Wingham	Ausable-Bayfield

AERIAL PHOTOGRAPHS BASE MAP: 435815

YEAR	ROLL	FLIGHT LINE	NUMBERS
1978	287	4338	152-154
1978	267	4339	203-208
1978	244	4340	76-80

1:50,000 NTS MAP SHOWING AREA BOUNDARIES 1:250,000



PHYSICAL AND BIOLOGICAL FEATURES

This site follows the deeply incised, winding valley of the Bayfield River for 10 km upstream of Bayfield. Along this section, the valley has a complex morphology with abandoned meander channels, oxbows and various floodplain terraces. The vegetation types represented include riverbank thickets, and floodplain wetlands (open forb-sedge meadows, willow thickets, cedar swamp), and slope and valley rim upland forest (maple-beech). Some of the disturbances to the site are resource extraction, dumping and past and present logging. Special features include Carolinian species representation (eg. sycamore), a deer yard, and a migratory trout and salmon run.

The west part of the Bayfield River lies in Site District 6-2, while the eastern half is in Site District 6-1. The Bayfield River was identified as the least disturbed river valley system in Site District 6-2, and a site with a good diversity of valley rim, slope, open and forested floodplain and riverbank vegetation. The Bayfield River and Eramosa River Valley (40P/9 685345) are the two best examples of river valley systems in Site District 6-1. The valley slope and rim forests are of particular note, as they represent upland forest vegetation types, a feature that is scarce in Site District 6-1.

DATA SHEETS ATTACHED

PHYSICAL DESCRIPTION ☐
VEGETATION SUMMARY ☐
EVALUATION SHEET ☐
COMMUNITY DESCRS. ☐
COMMUNITY COMP. LISTS ☐
SUMMARY SPECIES LISTS ☐
PHYSICAL FEATURES MAP ☐
VEGETATION MAP ☐
BIBLIOGRAPHY ☐
PHOTOGRAPHS ☐

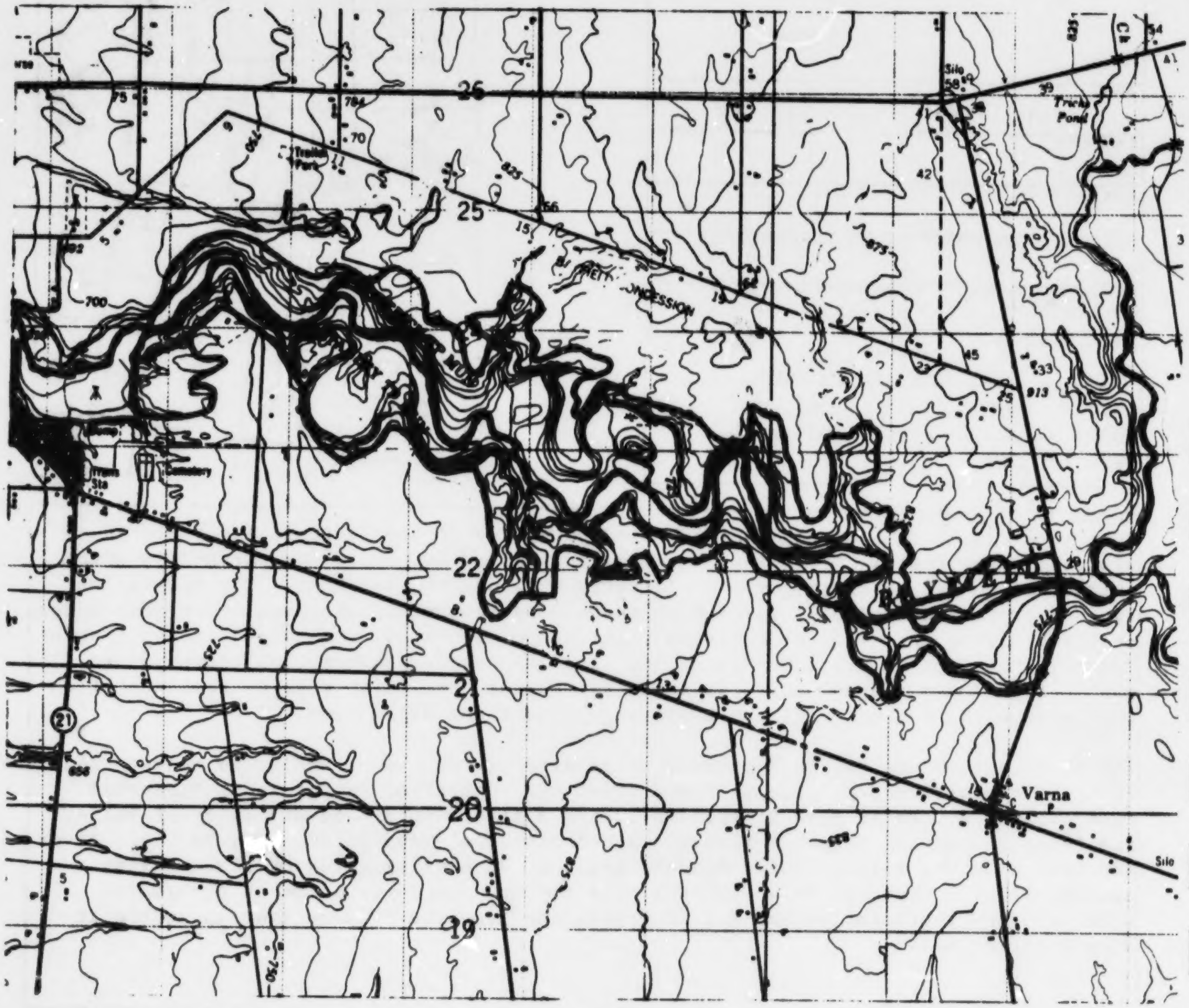
MAJOR INFORMATION SOURCES Chapman and Putnam, 1973; Creighton, 1982; Hanna, 1980; Klinkenberg and Rhodes, 1980; MNR, 1976.

EVALUATION AND PRIORITIES One of the best river valley sites in both Site District 6-1 and 6-2. Encompasses a good diversity of valley rim, slope and floodplain sites and supports high quality forests.

DATE COMPILED	COMPILER
Jan. 1981 Revised Fall 1982	R. Hanna and R. Klinkenberg

Ontario Ministry of Natural Resources, Division of Parks, Park Planning Branch, Queen's Park, Toronto, Ontario, M7A 1W3

Bayfield River 40P/12 480230



EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Eramosa River Valley	40P/9	685345

BRIEF DESCRIPTION

A 2040 ha river valley on spillway, with sections of braided stream bordering gravel terraces, rapids and limestone potholes; includes Everton Cedar Swamp and Rockwood Limestone Caves. Vegetation types include wetland complex with floodplain forests; marsh communities; cedar-fern-moss islands; upland forest; meadows and old fields. Special features include a deer yard, rare species (Mourning Warbler, Eastern Goshawk), an endangered species (West Virginia White Butterfly). A candidate nature reserve.

SOURCES

IBP,1970 & 1971;Eagles et al,1976;MNR,1976;Klinkenberg & Rhodes,1980 Klinkenberg,1980 & 1982;Biggley et al,1972;Chapman & Putnam,1973.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
September 28,1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Bayfield River	40P/12	480230

BRIEF DESCRIPTION

A 850 ha incised river valley system on till moraine with high level terraces and old oxbows. Includes upland valley rim and slope forests, cedar swamp and floodplain wetlands with transition forest. Past logging is evident. Special features include Carolinian species representation, a winter deer yard, and a migratory trout and salmon run. Part of site lies in Site District 6-2. Disturbed by cottage development, resource extraction and dumping, minor logging. A candidate nature reserve.

SOURCES

IBP; MNR, 1976; Klinkenberg and Rhodes, 1980; Hanna, 1980; Creighton 1982.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
October 1, 1980			Klinkenberg,1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

1981

EARTH	LIFE	NAME OF AREA	MAP SHEET	UTM REFERENCE
	x	Maitland River Valley	40P/12	480415

BRIEF DESCRIPTION

A 400 ha river valley sytstem exhibiting good examples of "incised meanders with successions of terraces on long slip-off slopes" and a preserved oxbow channel. Upland valley rim and slope communities (maple-beech; maple-ash-hemlock; cedar) and floodplain wetlands (marsh, lowland deciduous, mixed and coniferous swamp). Plantation and old field. Disturbances include land development, resource extraction, logging (past and present). Privately-owned.

SOURCES

MNR, 1976; Klinkenberg and Rhodes, 1982; Klinkenberg, 1980 and 1982; Chapman and Putnam, 1973.

FIELD SURVEY (DATE)	EARTH SCIENCE CHECK SHEET	LIFE SCIENCE CHECK SHEET	DATA CARD COMPILED
August, 1982			Klinkenberg,1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3rd FLOOR WHITNEY BLOCK QUEEN'S PARK TORONTO M7A 1W3

1981

SITE DISTRICT 6-1: RIVER VALLEY SYSTEMS

	x	West Montrose River Valley	40P/9	445320

A 320 ha spillway river valley system south of Elora Gorge. Gravel terraces and oxbow ponds present. Diverse natural area with floodplain wetlands, upland hardwoods and old fields. Community types include islands of cedar; hemlock-balsam stands, Manitoba maple-slippery elm stands, black maple-white ash-elm stands. Special features include rare species (1 of 4 Ontario populations of red phase red-backed salamanders;twinleaf and nodding trillium reported). Site of proposed dam (GRCA).

North Wellington ESA; Klinkenberg and Rhodes, 1980; 1978 Airphotos; Chapman and Putnam, 1966.

September 30,1980			Klinkenberg,1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM ENVIRONMENTAL DATA CARD	ONTARIO MINISTRY OF NATURAL RESOURCES [illegible]

SITE DISTRICT 6-1: UPLAND FORESTS

	x	St. Agatha Beech-Maple Forest	40P/7	275070

A 95 ha tract of upland maple-beech forest on undrumlinized till plain, dissected by a hydro corridor. Rare species reported include narrow-leaved spleenwort (Asplenium pycnocarpon).

Regional Municipality of Waterloo, 1974 and 1975; Klinkenberg and Rhodes, 1980. Klinkenberg, 1980 and 1982.

October 1, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3D FLOOR WHITNEY BLOCK, QUEEN'S PARK TORONTO M7A 1W3

	x	St. Helen's Beech-Maple Forest	40P/13	570635

A 57 ha upland maple-beech forest (sugar maple-beech-hemlock) surrounded by an immature beech-maple stand, a red maple swamp (red maple-ash-yellow birch) and small wetland pockets. A trout stream is present. Grazing and some logging occur in sections with a sawmill present in the young forest section. The site is managed for lumber. 4 km southwest of Lucknow.

MNR, 1976; Creighton, 1982; Klinkenberg and Rhodes, 1980; Klinkenberg, 1980 and 1982.

October 2, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3D FLOOR WHITNEY BLOCK, QUEEN'S PARK TORONTO M7A 1W3

	x	Natchez Hills Upland Woods	40P/8	465115

A 40 ha upland woods on a ridge of steep, rolling hills which slope to the Grand River floodplain. Vegetation types include upland deciduous woods (sugar maple-beech-white ash-basswood); lowland deciduous (silver maple) lowland coniferous (white cedar) woods; willow floodplain thickets; and stream communities. Rare species include nesting Red-Shouldered Hawks. Grand River trail runs through site. Site lies within the City of Kitchener.

Regional Municipality of Waterloo, 1974 and 1975; Klinkenberg, 1980 and 1982.

			Klinkenberg, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES
PARK PLANNING BRANCH ENVIRONMENTAL PLANNING SECTION
3D FLOOR WHITNEY BLOCK, QUEEN'S PARK TORONTO M7A 1W3

	x	Crosshill Complex	40P/10	230195

A series of small rolling woodlots, lying within a 5 km block east of Crosshill, including the Wellesley Concession Forest. Primarily upland woods (beech-maple-hemlock) with some sections of lowland forest (silver maple) and other wetland pockets and some open fields. Significant species present include hoary vervain, spotted coralroot, calla lily, and narrow-leaved spleenwort.

Regional Municipality of Waterloo, 1974 and 1975; Klinkenberg, 1980 and 1982.

October 30, 1980			Klinkenberg, 1980 Revised, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

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	x	Lackner Woods	40P/8	472105

A rolling upland woods (maple-beech-hemlock) surrounding a lowland forest (black ash-yellow birch-white cedar-silver maple). Pockets of cedar swamp located in northern section of woods. Significant species include spicebush and Pileated Woodpecker. This site should be field checked and evaluated further.

Regional Municipality of Waterloo, 1974 and 1975.

			Klinkenberg, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

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	x	Speedside Forest	40P/9	583356

A 70 ha upland deciduous woods (sugar maple-beech-hemlock) with a sparse understorey layer. Seasonally flooded spring swamp. Significant species include narrow-leaved spleenwort, silvery spleenwort and hay-scented fern. This site should be field checked and evaluated further.

Eagles et al, 1976; Klinkenberg, 1980 and 1982.

			Klinkenberg, 1982

ONTARIO NATURE RESERVES PROGRAM
ENVIRONMENTAL DATA CARD

ONTARIO MINISTRY OF NATURAL RESOURCES

APPENDIX B: CANDIDATE NATURE RESERVES IN THE NIAGARA ESCARPMENT PLANNING AREA PORTION OF SITE DISTRICT 6-1

The most easterly part of Site District 6-1 was excluded from this study because it lies within the Niagara Escarpment Planning Area, and an identification and evaluation of candidate nature reserves within the Niagara Escarpment Planning Area was already available (Park Planning Branch, 1976). The five candidate nature reserves selected within the portion of the Niagara Escarpment Planning Area that lies within Site District 6-1 are summarized below.

CANDIDATE NATURE RESERVE	SUMMARY OF FEATURES AND COMMENTS	SIZE (HA)
Ballinafad Pond (40P/9 805365)	-This site exhibits a representative pattern of wetland vegetation (coniferous and deciduous swamp forests, floating shrub margin) around a small kettle lake. Refer to Park Planning Branch (1976, p. 315) for additional information.	20
Halton Forest North (30M/12 840230)	-A large area of upland forests, swamp forests and wetlands on the limestone plains above the escarpment. Includes escarpment rim, cliff and talus slope habitats. Refer to Park Planning Branch (1976, p. 327) for additional information.	700
Halton Forest South (30M/12 820190)	-As the largest continuous forest along the escarpment south of the Bruce Peninsula, this area has a very high rating in terms of both representativeness and unusualness. Upland forests on limestone plain, various wetlands and headwater source areas and habitat for the endangered West Virginia White Butterfly are some of its many significant features. Refer to Park Planning Branch (1976, p. 321) for additional information.	1500
Crawford Lake-Milton Outlier Valley (30M/5 855135)	-Crawford Lake is a deep meromictic lake in a bedrock collapse feature and is important for palynological studies. The adjoining outlier valley is a well-preserved ecological unit with upland, valley, swamp, stream and escarpment slope associations. A provincially-significant geological site as well. Refer to Park Planning Branch (1976, p.341) for additional information.	300

CANDIDATE NATURE RESERVE	SUMMARY OF FEATURES AND COMMENTS	SIZE (HA)
Lowville Bronte Creek Valley (30M/5 875080)	-An example of an incised escarpment reentrant valley with well-developed vegetation patterns on the valley slopes and floodplains. Refer to Park Planning Branch (1976, p.345) for additional information.	120

APPENDIX C: DOCUMENTED SITES OF BIOLOGICAL SIGNIFICANCE

1. SITE DISTRICT 6-1: SITES OF BIOLOGICAL SIGNIFICANCE WITH BACKGROUND INFORMATION LISTED BY 1:50,000 N.T.S. MAP SHEET.

1:50,000 N.T.S. maps included in Site District 6-1, listed from west to east, north to south.

41A/4 - no known sites with background information
40P/13
40P/12
40P/5
41A/3
40P/14
40P/11
40P/6
40P/10
40P/7
40P/9
40P/8
30M/12W - within N.E.P.A.[1], no sites listed
30M/5W - within N.E.P.A, no sites listed

LEGEND TO ABBREVIATIONS

IPB - Site studied as part of International Biological Program

API - Site identified by airphoto analysis

ESA - Environmentally sensitive area identified in a report for a regionally municipality, county or conservation authority

1. Credit River Watershed E.S.A., 1979.
2. Halton Region E.S.A., 1978.
3. Hamilton-Wentworth Region E.S.A., 1976.
4. North Wellington E.S.A., 1977.
5. Southern Bruce County E.S.A., 1980.
6. Waterloo County E.S.A., 1975.
7. South Wellington E.S.A., 1976.

SA - Ontario Ministry of Natural Resources Sensitive Areas

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[1] N.E.P.A. = Niagara Escarpment Planning Area

	UTM GRID REFERENCES	INFORMATION SOURCE
40P/13 LUCKNOW		
Saratoga Swamp (south)	520500	IBP
Saratoga Swamp (east)	535503	IBP, SA
Saratoga Swamp (northwest)	535530	IBP
-----	535576	API
-----	560610	API
St. Helen's Beech - Maple Forest	580638	SA
-----	585500	API
St. Augustine Bog and Swamp Forest	590570	IBP, SA
40P/12 GODERICH		
-----	470180	API
Maitland River from Auburn to the mouth	470410	IBP, SA
Bayfield River Gorge (Valley East)	480230	IBP, SA
Varna Deciduous Forest	515240	IBP, SA
-----	525290	API
-----	530220	API
Maitland River Valley (central)	530370	IBP
Maitland River Valley (eastern section)	540395	IBP
40P/5 GRAND BEND		
Hay Swamp	550030	SA
-----	555990	API
41A/3 WALKERTON		
Hodgins Lake and Woodland	670785	SA
Greenock Swamp	670800	IBP, SA
McGlinn Lake	700770	SA
Harrison Township	710750	SA
40P/14 WINGHAM		
Purvis Lake	620665	ESA[5]
Dickey's Creek	620690	ESA[5]
Westfield Swamp	630480	IBP
-----	630625	API
Langwide Bog	652690	IBP, ESA[5]
-----	655565	API
Lucknow River Uplands	660710	ESA[5]
-----	680605	API
Belgrave Swamp	685570	IBP
Turnberry Swamp	705630	SA, API
-----	755470	API

	UTM GRID REFERENCES	INFORMATION SOURCE
40P/11 SEAFORTH		
Hullet Wildlife Management Area	610310	SA
-----	727403	API
Ament and Pollard Tracts	760400	SA
40P/6 ST. MARY'S		
-----	860000	API
-----	870975	API
Carlingford Forest (Whirl Creek Woods)	870070	IBP, SA
-----	910140	API
Sebringville Forest (Woods)	935055	IBP, SA
-----	995110	API
40P/10 CONESTOGO		
Hay Swamp	005270	SA
Woodlot north of Newton	100280	SA
Forest east of Millbank	115235	SA
Crosshill Woods	215210	
	220200	ESA$_6$, SA
Wellesley Concession Forest (Crosshill Forest, southwest of St. Clement's)	245180	IBP, ESA6, SA
Bog Forest southwest of St. Clement's	256174	SA
Showy Orchid Woods	280170	SA
Wallenstein Forest	285295	ESA$_4$
Heidelburg Area	290165	ESA$_6$
-----	330215	API
Canagagigue	380260	API
-----	390254	API
North Woolwich Regional Forest (Sandhills)	380325	ESA$_6$
40P/7 STRATFORD		
-----	010990	API
Ellice Huckleberry Marsh	040145	IBP, SA
Little Lake	055010	SA
Gads Hill Agreement Forest	060085	IBP, SA
Little Lake Bog and Woodlot (small ponds east of Stratford)	065020	SA
-----	085130	API
-----	120985	API
Phillipsburg Swamp	190090	ESA$_6$
Phillipsburg Forest	220055	EAS$_6$, SA
	230060	
Bamburg Swamp and Bog Lake	258155	ESA$_6$
St. Agatha Forest	275070	ESA$_6$
Paradise Lake	275160	ESA$_6$, SA
Haysville Flats	280990	SA
Baden Hills	280050	IBP, ESA$_6$, SA
Nith River Valley (floodplain)	290975	IBP, ESA$_6$, SA

	UTM GRID REFERENCES	INFORMATION SOURCE
Spongy Lake (bog and sandhills)	295070	IBP, ESA$_{6}$, SA
Sunfish Lake Area	290140	SA
Sunfish Lake	300135	ESA$_{6}$, SA
Schaefer's Woods	310140	ESA$_{6}$, SA
Hoffsetter Lake	315050	SA
Forested Hills (cedar swamp south of Erbsville)	325123	ESA$_{6}$, SA
Woodlots east of Spongy Lake	330080	SA
Laurel Creek Conservation Area	340140	ESA$_{6}$, SA

40P/9 GUELPH

West Montrose Forest	405250	API
North Woolwich Swamp (swamp south of Pentland Corners)	405310	ESA$_{6}$, SA
-----	415185	API
Vagle River Bank	423290	ESA$_{6}$
South of Inverhaugh	430295	SA
Forest north of Bloomingdale	440195	SA
Bloomingdale Heronry Woods	445183	IBP, ESA$_{6}$, SA
Mosquito Woods	445284	SA
West Montrose Valley	445320	ESA$_{4}$
Bog south of Weissenburg	475230	SA
Maryhill Swamp	485193	SA
Ariss Woods (Maple Swamp)	541225	ESA$_{7}$, SA
Swan Creek	550360	ESA$_{4}$
Swamp south of Ennotville	560320	SA
Speedside Forest	583356	ESA$_{7}$
Hanlon Creek Watershed (groundwater recharge area)	635170	ESA$_{7}$, SA
Hall's Pond	646185	ESA$_{7}$
Eramosa River Valley	680240	ESA$_{7}$, SA
Everton Cedar Swamp	685345	IBP, SA
Rockwood Limestone Caves (Limestone Cliff)	690285	IBP, ESA$_{7}$, SA
-----	690320	API
Eramosa and Blue Springs Creek	700240	SA
-----	710380	API
Blue Springs Swamp	725210	ESA$_{2}$
Blue Springs Creek Valley	730285	ESA$_{2}$
Blue Springs Scout Reserve	740295	IBP, SA
Brisbane Swamp	750430	SA
Knatchbull Swamp	748246	ESA$_{2}$
-----	755240	API
Brisbane Woods I	760410	ESA$_{1}$
Brookville Swamp	770220	ESA$_{2}$
Brisbane Woods II	770420	ESA$_{1}$
Badenock Swamp	755170	SA
Fairy Lake Marsh	775305	ESA$_{2}$
Nassagaweya Escarpment Area	800200	SA
Acton Swamp	800290	ESA$_{2}$ SA
Fern Concentration - Sayer Mills	805210	SA

40P/8 GALT	UTM GRID REFERENCES	INFORMATION SOURCE
Steckle's Woods	435060	IBP, SA
Stanley Park Conservation Area (east side conservation area)	440110	ESA$_6$, SA
Strasburg Floral Woods	442022	ESA$_6$
Strasburg Marl Meadow	450047	ESA$_6$
Strasburg Woods	453026	ESA$_6$
Homer Watson Park	455058	ESA$_6$
Petrifying Spring (Parkway Area)	458063	ESA$_6$, SA
Idlewood Park	458100	ESA$_6$
Roseville Swamp	460000	IBP, ESA$_6$, SA
Oregon Pond Woods	460040	ESA$_6$
Hidden Valley (Bird Ridge)	462073	ESA$_6$
Northwest of Doon	464050	SA
Natchez Hills	465115	ESA$_6$
Lackner Woods	470105	ESA$_6$
Doon Pinnacle Hill (south of doon)	475033	ESA$_6$, SA
Blair Swamp	480020	ESA$_6$
Barrie Tract	490985	ESA$_6$
Breslau Heronry (Breslau)	497140	ESA$_6$, SA
Junction of Speed and Grand Rivers	500040	ESA$_6$
Altrieve Lake and Forest (Lake Altrieve)	510010	IBP, ESA$_6$, SA
Orr's Lake	515005	ESA$_6$
Kossuth Bog	518107	IBP, ESA$_6$, SA
Milroy Lake (Veitch's Lake)	520985	ESA$_6$
Barrie's Lake (Orr's Lake)	523007	ESA$_6$, SA
South of Preston	524020	SA
Gilholm Marsh	528999	ESA$_6$
Cruickston Park Farm	530030	ESA$_6$
North Preston	535070	SA
Salisburg Ridge and Victoria Park	540015	ESA$_6$
Irish Creek Swamp (Hespeler)	580105	ESA$_7$, SA, API
Speed River	580147	SA
Puslinch Lake Conservation Area	590060	IBP, ESA$_7$
Oil Well Bog	600125	IBP
Oil Well Bog - Little Tract	605110	ESA$_7$
Cruickston Park Farm	606028	SA
Galt Creek and Forest	620060	ESA$_7$
Cranberry Bog (Oil Well Bog - Little Tract)	625128	ESA$_7$, SA
Beverly Swamp (West of Valens)	650020	IBP, ESA$_3$
	710030	ESA$_6$, SA
Valens Conservation Area (Wildlife Extension Area)	690045	ESA$_3$
Aberfoyle Woods (Northeast of Aberfoyle)	690148 730158	ESA$_7$, SA$_2$
Crieff Oil Field Complex	705093 708090	ESA$_3$, ESA$_7$
Fletcher Creek Swamp Forest	710072	ESA$_7$
Fletcher Creek Swamp Forest	718064	ESA$_3$
Beverly Swamp (Central)	720020	IBP, ESA$_3$, SA, ESA$_6$, API
Beverly Swamp Reserve	740045	IBP
Westover Wetland	740990	ESA$_3$
Moffat Marsh (Badenock Swamp	750140	API, IBP, ESA$_2$
Fish Hatchery Swamp)	755155	ESA$_7$, SA$_2$
Mountsberg Wildlife Area	770120	ESA$_3$, ESA$_7$

2. SITE DISTRICT 6-1: SITES OF BIOLOGICAL SIGNIFICANCE LISTED BY PHYSIOGRAPHIC REGION (Chapman and Putnam, 1973)

Physiographic Regions with 6-1:

- Horseshoe Moraines
- Stratford Till Plain
- Guelph Drumlin Field
- Waterloo Hills
- Flamborough Plain
- Huron Slope
- Dundalk Till Plain
- Hillsburg Sand Hills

HORSESHOE MORAINES

	UTM GRID REFERENCES	INFORMATION SOURCE
41A/3 WALKERTON		
Hodgins Lake and Woodland	670785	SA
Greenock Swamp	670800	IBP, SA
McGlinn Lake	700770	SA
Harrison Township	710750	SA
40P/14 WINGHAM		
Purvis Lake	620665	ESA$_5$
-----	630625	API
Landside Bog	652690	IBP, ESA$_5$
Lucknow River Uplands	660710	ESA$_5$
40P/11 SEAFORTH		
Hullet Wildlife Management Area	610310	SA
40P/9 GUELPH		
Blue Springs Swamp	725210	ESA$_2$
Blue Springs Creek Valley	730285	ESA$_2$
Blue Springs Scout Reserve	740295	IBP, SA
Knatchbull Swamp	755240	ESA$_2$
Brisbane Woods I	760410	ESA$_1$
Brookville Swamp	770220	ESA$_2$
Brisbane Woods II	770420	ESA$_1$
Fairy Lake Marsh	775305	ESA$_2$
40P/8 GALT		
Barrie Tract	490985	ESA$_6$
Milroy Lake (Veitch's Lake)	520985	ESA$_6$
Irish Creek Swamp (Hespeler)	580105	ESA$_7$, SA, API
Puslinch Lake Conservation Area	590060	IBP, ESA$_7$
Oil Well Bog	600125	IBP
Cruickston Park Farm	606028	SA
Galt Creek and Forest	620060	ESA$_7$
Cranberry Bog (Oil Well Bog - Little Tract)	625128	ESA$_7$, SA

	UTM GRID REFERENCES	INFORMATION SOURCES
Aberfoyle Woods (northeast of Aberfoyle)	690148 730158	ESA$_7$, SA(two)
Crieff Old Field Complex	705093 708090	ESA$_3$, ESA$_7$
Fletcher Creek Swamp Forest	710072	ESA$_7$

STRATFORD TILL PLAIN

40P/14 WINGHAM

Westfield Swamp	630480	IBP
-----	655565	API
-----	680605	API
Belgrave Swamp	685570	IBP
Turnberry Swamp	705630	SA
-----	755470	API

40P/11 SEAFORTH

Hullet Wildlife Management Area	610310	SA
-----	727403	API
Ament and Pollard Tracts	760400	SA

40P/6 ST. MARY'S

-----	860000	API
-----	870975	API
Carlingford Forest (Whirl Creek Woods)	870070	IBP, SA
-----	910140	API
Sebringville Forest (Woods)	935055	IBP, SA
-----		API,

40P/10 CONESTOGO

Woodlot north of Newton	100280	SA
Forest east of Millbank	115235	SA
Wellesley Concession Forest (Cross Hills Forest, southwest of St. Clements)	245180	IBP, ESA$_6$, SA
Wallenstein Forest	285295	ESA$_4$

40P/7 STRATFORD

-----	010990	API
Ellice Huckleberry Marsh	040145	IBP, SA
Little Lake	055010	SA
Gads Hill Agreement Forest	060085	IBP, SA
Little Lake Bog and Woodlot (small ponds east of Stratford)	065020	SA
-----	085130	API
-----	120985	API
Haysville Flats	280990	SA

	UTM GRID REFERENCES	INFORMATION SOURCE
GUELPH DRUMLIN FIELD		
40P/10 CONESTOGO		
Showy Orchid Woods	280170	SA
Heidelburg Area	290165	ESA$_6$
-----	330215	API
Canagagigue	380260	API
-----	390254	API
North Woolwich Regional Forest (sandhills)	380325	ESA$_6$
40P/7 STRATFORD		
Laurel Creek Conservation Area	340140	ESA$_6$ SA
40P/9 GULEPH		
West Montrose Forest	405250	API
North Woolwich Swamp (swamp south of Pentland Corners)	405310	ESA$_6$, SA
-----	415185	API
Vagle River Bank	423290	ESA$_6$
South of Inverhaugh	430295	SA
Forest north of Bloomingdale	440195	SA
Bloomingdale Heronry Woods	445183	IBP, ESA$_6$, SA
Mosquito Woods	445284	SA
West Montrose Valley	445320	ESA$_4$
Bog south of Weissenburg	475230	SA
Maryhill Swamp	485193	SA
Ariss Woods (Maple Swamp)	541225	ESA$_7$, SA
Swan Creek	550360	ESA$_4$
Swamp south of Ennotville	560320	SA
Speedside Forest	583356	ESA$_7$
Hanlon Creek Watershed (groundwater recharge area)	635170	ESA$_7$, SA
Hall's Pond	646185	ESA$_7$
Ermosa River Valley	680240	ESA$_7$, SA
Everton Cedar Swamp	685345	IBP, SA
Rockwood Limestone Caves (limestone cliff)	690285	IBP, ESA$_7$, SA
Ermosa and Blue Springs Creek	700240	SA
-----	710380	API
Brisbane Swamp	750430	SA
40P/8 GALT		
Blair Swamp	480020	ESA$_6$
Breslau Heronry (Breslau)	497140	ESA$_6$, SA
Junction of Speed and Grand Rivers	500040	ESA$_6$
Altrieve Lake and Forest (Lake Altrieve)	510010	IBP, ESA$_6$, SA
Orr's Lake	515005	ESA$_6$
Kossuth Bog	518107	IBP, ESA$_6$, SA
Barrie's Lake (Orr's Lake)	523007	ESA$_6$, SA
South of Preston	524020	SA

	UTM GRID REFERENCES	INFORMATION SOURCE
Gilholm Marsh	528999	ESA[6]
Cruickston Park Farm	530030	ESA[6]
North Preston	535070	SA
Salisburg Ridge and Victoria Park	540015	ESA[6]
Speed River	580147	SA

WATERLOO HILLS

40P/10 CONESTOGO

Crosshill Woods	215210 220200	ESA[6], SA
Wellesley Concession Forest (Crosshill Forest, southwest of St. Clements)	245180	IBP, ESA[6], SA

40P/7 STRATFORD

Phillipsburg Swamp	190090	ESA[6]
Phillipsburg Forest	220055 230060	ESA[6], SA
Bamburg Swamp and Bog Lake	258155	ESA[6]
St. Agatha Forest	275070	ESA[6]
Paradise Lake	275160	ESA[6], SA
Baden Hills	280050	IBP, ESA[6], SA
Nith River Valley (floodplain)	290975	IBP, ESA[6], SA
Spongy Lake (bog and sandhills)	295070	IBP, ESA[6], SA
Sunfish Lake Area	290140	SA
Sunfish Lake	300135	ESA[6], SA
Schaefer's Woods	310140	ESA[6], SA
Hoffsetter Lake	315050	SA
Forested Hills (cedar swamp south of Erbsville)	325123	ESA[6], SA
Woodlots east of Spongy Lake	330080	SA
Laurel Creek Conservation Area	340140	ESA[6], SA

40P/8 GALT

Steckles Woods	435060	IBP. SA
Stanley Park Conservation Area (east side conservation area)	440110	ESA[6], SA
Strasburg Floral Woods	442022	ESA[6]
Strasburg Marl Meadow	450047	ESA[6]
Strasburg Woods	453026	ESA[6]
Homer Watson Park	455058	ESA[6]
Petrifying Spring (Parkway Area)	458063	ESA[6], SA
Idlewood Park	458100	ESA[6]
Roseville Swamp	460000	IBP, ESA[6], SA
Oregon Pond Woods	460040	ESA[6]
Hidden Valley (Bird Ridge)	462073	ESA[6]
Northwest of Doon	464050	SA
Natchez Hills	465115	ESA[6]
Lackner Woods	470105	ESA[6]
Doon Pinnacle Hill (south of Doon)	475033	ESA[6], SA

	UTM GRID REFERENCES	INFORMATION SOURCES
FLAMBOROUGH PLAIN		
40P/9 GUELPH		
Badenock Swamp	755170	SA
Nassagaweya Escarpment Area	800200	SA
Acton Swamp	800290	ESA$_{2}$, SA
Fern Concentration - Sayer Mills	805210	SA
40P/8 GALT		
Beverly Swamp (west of Valens)	650020	IBP. ESA$_{3}$,
	710030	ESA$_{6}$, SA
Valens Conservation Area (Wildlife Extension Area)	690045	ESA$_{3}$
Fletcher Creek Swamp Forest	710072	ESA$_{7}$
Fletcher Creek Swamp Forest	718064	ESA$_{3}$
Moffat Marsh (Badenock Swamp, Fish	750140	API, IBP, ESA$_{2}$,
Hatchery Swamp)	755155	ESA$_{7}$, SA(twn)
Mountsberg Wildlife Area	760130	ESA$_{3}$, ESA$_{7}$
	780122	
Beverly Swamp (central)	720020	IBP. ESA$_{3}$, SA, ESA$_{6}$, API
Beverly Swamp Reserve	740045	IBP
HURON SLOPE		
40P/14 WINGHAM		
Dickey's Creek	620690	ESA$_{5}$
40P/13 LUCKNOW		
Saratoga Swamp (south)	520500	IBP
Saratoga Swamp (east)	535503	IBP, SA
Saratoga Swamp (northwest)	535530	IBP
-----	535576	API
-----	560610	API
St. Helen's Beech-Maple Forest	580638	SA
-----	585500	API
St. Augustine Bog and Swamp Forest	590570	IBP, SA
40P/12 GODERICH		
-----	470180	API
Maitland River from Auburn to the mouth	470410	IBP, SA
Bayfield River Gorge (valley east)	480230	IBP, SA
Varna Deciduous Forest	515240	IBP, SA
-----	525290	API
-----	530220	API
Maitland River Valley (central)	530370	IBP
Maitland River Valley (eastern section)	540395	IBP
40P/5 GRAND BEND		
Hay Swamp	550030	SA
-----	555990	API

	UTM GRID REFERENCES	INFORMATION SOURCES
DUNDALK TILL PLAIN		
40P/10 CONESTOGO		
Hay Swamp	005270	SA

P. Terpstra, 1980

APPENDIX D: POLICY FOR AREAS OF NATURAL AND SCIENTIFIC INTEREST

Areas of Natural and Scientific Interest (ANSI) are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage appreciation, scientific study or education.

ANSIs may vary in level of significance. The most significant of these may contribute to the achievement of the Ministry's protection objective.

Where ANSIs occur on public lands managed by the Ministry, it will ensure that the land uses and activities which occur, provide for the protection of identified values.

On private lands, the Ministry will, through cooperation with others, attempt to ensure that landowners are aware of significant features on their properties and seek the owners' cooperation in protecting such features. The identification of areas of natural and scientific interest on private land does not indicate an intent of the Ministry to acquire this land.

ANSIs encourage the protection of additional areas not regulated as provincial parks and provide a focus for both the public and private sectors to contribute to the protection of Ontario's natural heritage.

The policy for Areas of Natural and Scientific Interest is taken from *Backgrounder: Land Use Guidelines*. June, 1983.

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Guelph	40P/9	1970
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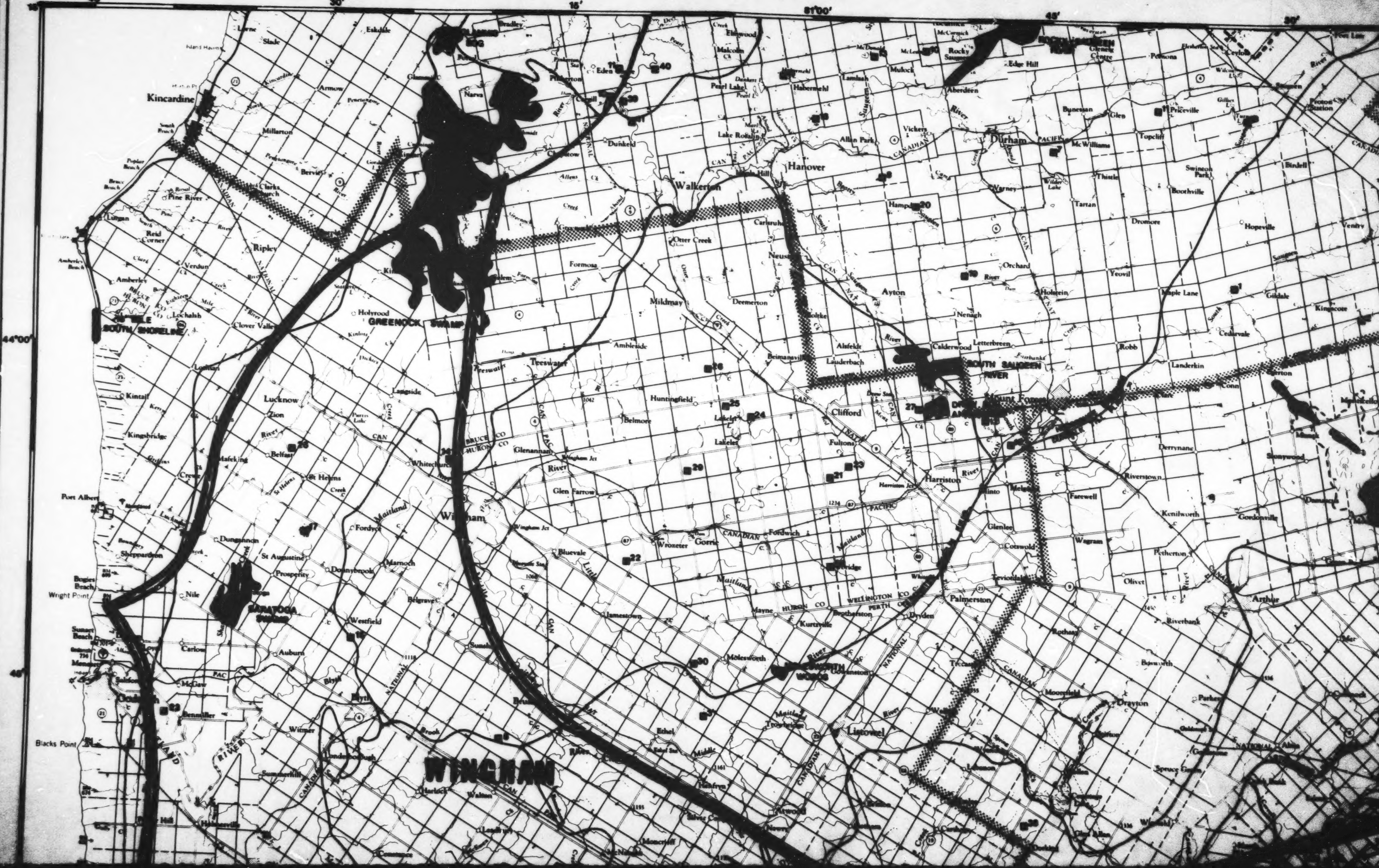45'
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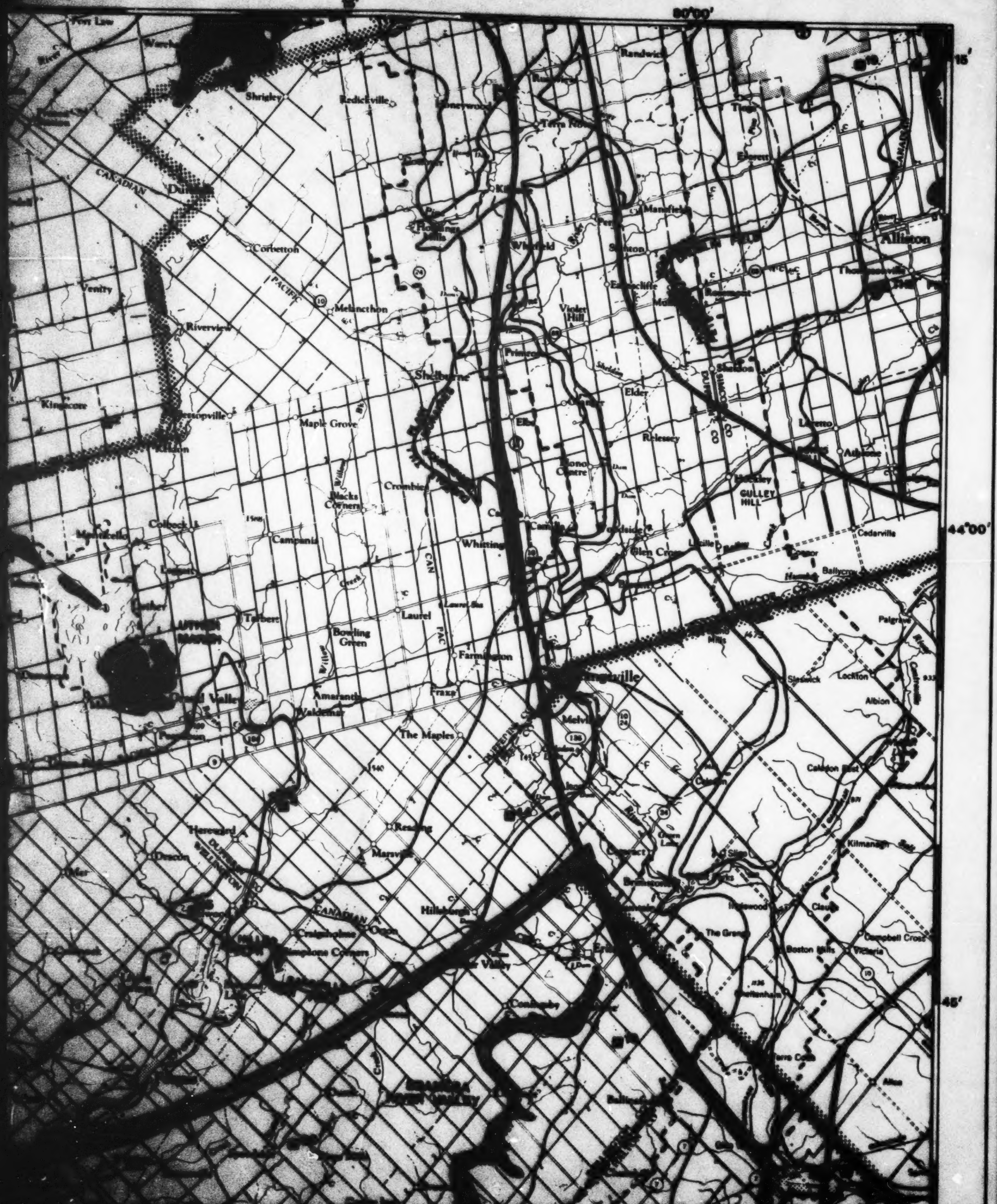
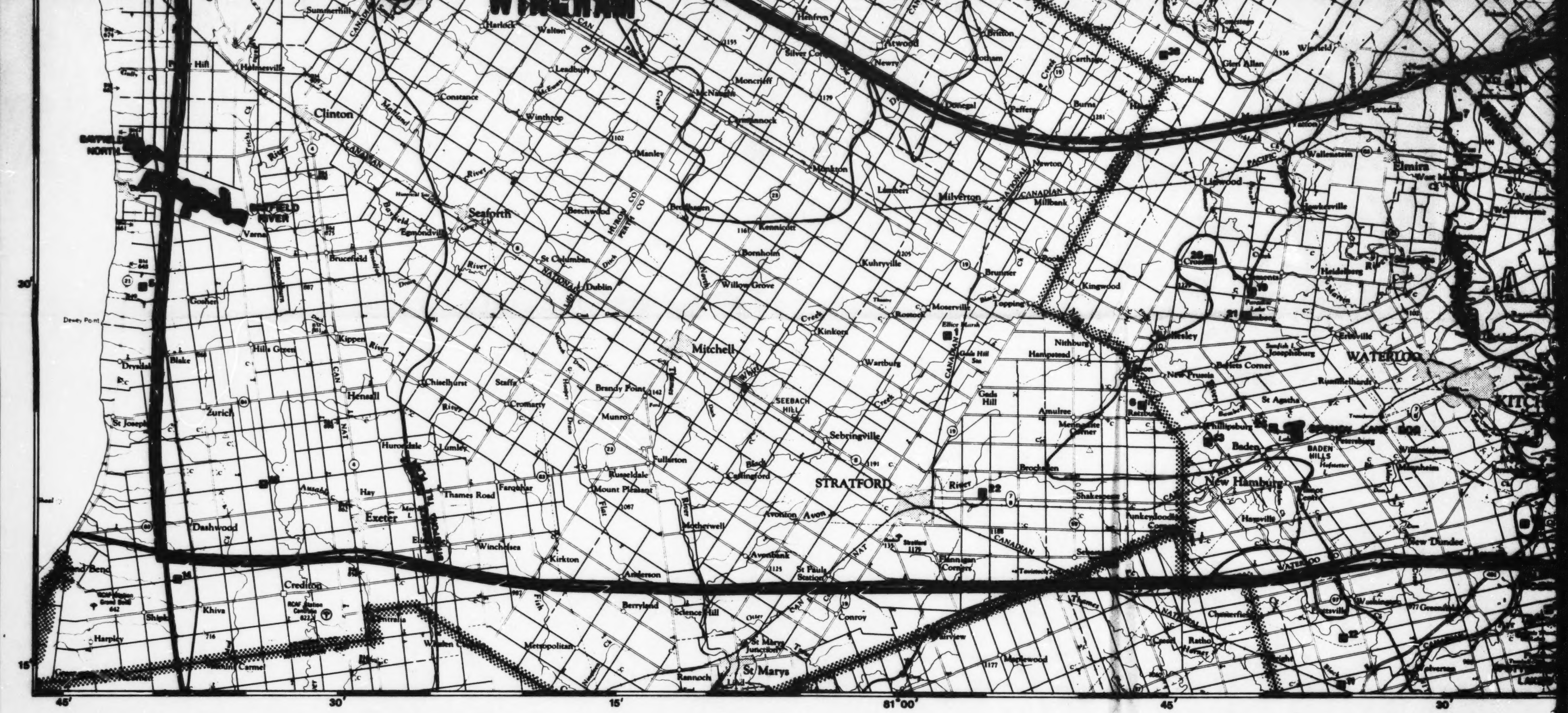
Kincardine
Lurgan
Pine River
Ripley
Amberley
Lochalsh
Clover Valley
30 MILE SOUTH SHORELINE
Holyrood
GREENOCK SWAMP
Lucknow
Zion
Kingsbridge
Belfast
St Helens
Port Albert
Dungannon
St Augustine
Nile
SARATOGA SWAMP
Carlow
Auburn
Blyth
Goderich
Benmiller
Blacks Point
Westfield
Belgrave
Whitechurch
Wingham
Bluevale
WINGHAM
Londesborough
Walton
Glenannan
Teeswater
Formosa
Mildmay
Ambleside
Belmore
Huntingfield
Lakelet
Gorrie
Wroxeter
Fordwich
Walkerton
Hanover
Otter Creek
Deemerton
Neustadt
Ayton
Clifford
Harriston
Palmerston
Listowel
Molesworth
Ethel
Durham
Aberdeen
Edge Hill
Rocky Saugeen
Priceville
Dromore
Hopeville
Holstein
Orchard
Varney
Calderwood
SOUTH SAUGEEN RIVER
Mount Forest
Riverstown
Kenilworth
Arthur
Drayton
Moorefield
Rothsay
Teviotdale
Cotswold
Farewell
Wagram
Derrynane
Conn
Landerkin
Yeovil
Maple Lane
Gildale
Kingscote
Bunessan
Glen
Topcliff
Thistle
Boothville
Birdell
Eden Grove
Pinkerton
Chepstow
Dunkeld
Cargill
Lake Rosalind
Allan Park
Vickers
Hampden
Elmwood
Malcolm
Pearl Lake
Habermehl
Lamlash
Mulock
Paisley
Eskdale
Slade
Lorne
Armow
Millarton
Bervie
Clarks Church
Verdun
Reid Corner
Lucknow
Langside
Mafeking
Port Albert
Sheppardton
Wright Point
Sunset Beach
Fordyce
Marnoch
Donnybrook
Prosperity
Jamestown
Mayne
Kurtzville
Brotherston
Dryden
Fultons
Belmanaville
Alsfeldt
Lauderbach
Letterbreen
Nenagh
Robb
Cedarvale
Olivet
Petherton
Gordonville
Riverbank
Bosworth
Spruce Grove
Wingham Jct
Harriston Jct
Summerhill
Londesborough
Witmer
Moncrieff
Newry
Gowanstown
Trowbridge
Wallace
Teeswater
BRUCE CO
HURON CO
WELLINGTON CO
PERTH CO
HURON CO
CANADIAN PACIFIC
CANADIAN NATIONAL
Maitland River
Saugeen River
40
20
26
25
24
29
21
23
22
30
33
28
18


15'
80°00'
15'
44°00'
45'
Randwick
Shrigley
Redickville
Honeywood
Terra Nova
Tioga
Everett
CANADIAN
PACIFIC
Mansfield
Alliston
Corbetton
Whitfield
Stanton
Thompsonville
Earnscliffe
Violet Hill
Melancthon
Riverview
Venity
Primrose
Shelburne
Elder
Kingscote
Jessopville
Maple Grove
Loretto
Relessey
Mono Centre
Hockley
GULLEY HILL
Crombie
Blacks Corners
Colbeck
Monticello
Campania
Whittington
Glen Cross
Cedarville
Ballycroy
Palgrave
Laurel
Bowling Green
Farmington
Tarbert
Luther
CAN
PAC
Fraxa
Amaranth
Waldemar
The Maples
Melville
Sleswick
Lockton
Albion
Caledon East
Caledon
DUFFERIN
SIMCOE
WELLINGTON
Hereward
Reading
Marsville
Kilmanagh
Deacon
Hillsburgh
Orton
Craigsholme
Cataract
Inglewood
Claude
The Grange
Boston Mills
Victoria
Campbell Cross
Cheltenham
Terra Cotta
Erin
Coningsby
Ballinafad
Alton



CANDIDATE NATURE RESERVES AND SIGNIFICAN
WEST OF THE NIAGARA ESCARPMENT

Candidate Nature Reserves

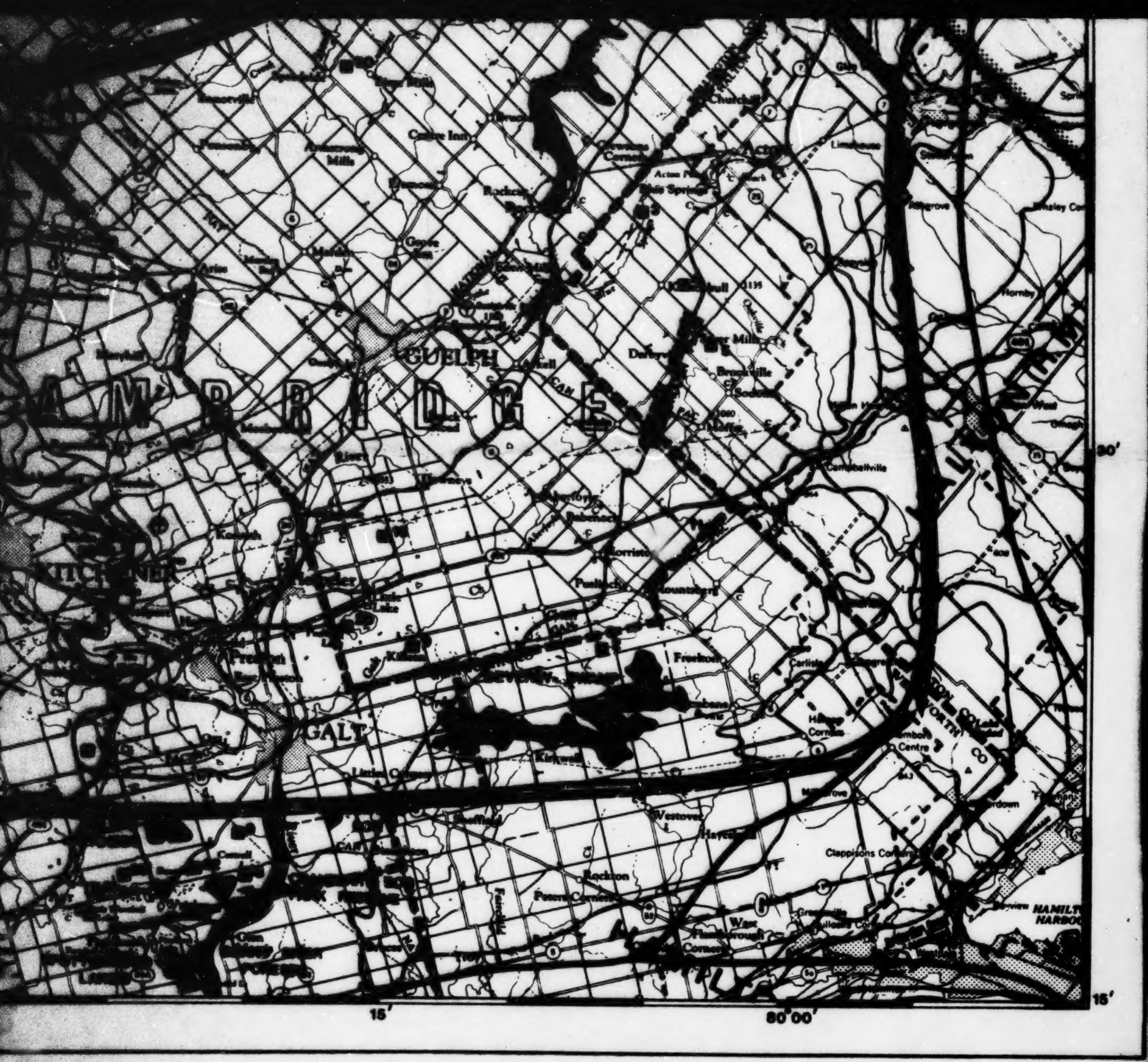
▬ Site District boundary

― Physiographic Region boundary

■ Candidate Nature Reserve

WETLANDS

SWAMP FORESTS AND ASSOCIATED WETLANDS
- Beverly Swamp (40P/8 720025)
- Greenock Swamp (41A/3 700890)
- Saratoga Swamp (40P/13 530510)



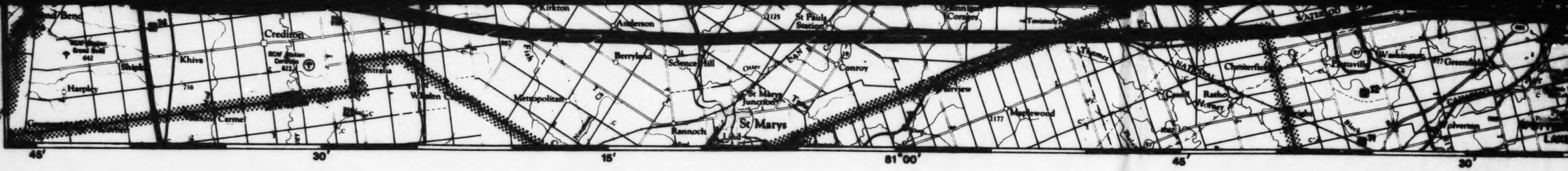
NIFICANT SITES IN SITE DISTRICT 6-1,
RPMENT PLANNING AREA

Significant Sites

WETLANDS

SWAMP FORESTS AND ASSOCIATED WETLANDS

1. Ellice-Huckleberry Marsh (40P/7 040140)
2. Fletcher Creek Swamp Forest (40P/8 720065)
3. Blue Springs Creek Wetlands (40P/9 730285)
4. Knatchbull Swamp (40P/9 750245)
5. Brookville Swamp (40P/9 770220)



CANDIDATE NATURE RESERVES AND SIGNIFICA
WEST OF THE NIAGARA ESCARPMEN

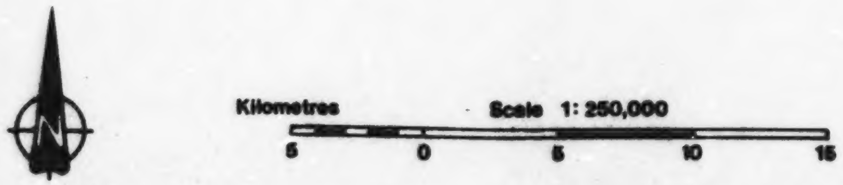
Candidate Nature Reserves

▬ ▬	Site District boundary
───	Physiographic Region boundary
■■■	Candidate Nature Reserve
■	Significant Site
-------	Niagara Escarpment Planning Area
Drawn by	P. Terpstra
Date	June 1983

The name "Candidate Nature Reserve" was changed to "Area of Natural and Scientific Interest (ANSI)" in 1983.

WETLANDS
- SWAMP FORESTS AND ASSOCIATED WETLANDS
  - -Beverly Swamp (40P/8 720025)
  - -Greenock Swamp (41A/3 700890)
  - -Saratoga Swamp (40P/13 530510)
- KETTLE LAKES AND BOGS
  - -Spongy Lake Bog (40P/7 295070)

RIVER VALLEY SYSTEMS
- -Eramosa River Valley (40P/9 685345)
- -Bayfield River (40P/12 480230)



Sources of Information

Physiographic region boundaries used on this map follow those of Chapman and Putnam, 1966. Site District boundaries presented here were derived from an unpublished small scale map provided by Forest Site Research. Boundaries were extrapolated and are thus only approximations of Site District boundaries. Please refer to the Site District 6-1 report (Areas of Natural and Scientific Interest in Site District 6-1: A Review and Assessment of Significant Natural Areas in Site District 6-1 by R. Klinkenberg, 1984) for further information.

GNIFICANT SITES IN SITE DISTRICT 6-1,
RPMENT PLANNING AREA

Significant Sites

WETLANDS

SWAMP FORESTS AND ASSOCIATED WETLANDS

1. Ellice-Huckleberry Marsh (40P/7 040140)
2. Fletcher Creek Swamp Forest (40P/8 720065)
3. Blue Springs Creek Wetlands (40P/9 730285)
4. Knatchbull Swamp (40P/9 750245)
5. Brookville Swamp (40P/9 770220)
6. Phillipsburg Swamp (40P/7 185085)
7. North Woolwich Swamp (40P/10 404300)
8. Ament and Pollard Tract (40P/11 760400
9. Galt (Mill) Creek and Forest (40P/8 620060)
10. Brisbane Woods (40P/9 770420)
11. Mountsberg Wildlife Centre (40P/8 770120)
12. Roseville Swamp (40P/8 460000)
13. Phillipsburg Forest (40P/7 230060)
14. Turnberry Swamp (40P/14 710630)
15. Westfield Swamp (40P/14 630480)
16. Hay Swamp (40P/5 540020)

KETTLE LAKES AND BOGS

17. St. Augustine Bog and Swamp Forest (40P/13 590570)
18. Oil Well Bog - Little Tract (40P/8 610115)
19. St. Clements Sphagnum Bog (40P/10 257174)
20. Puslinch Lake Bog and Wetlands (40P/8 590070)
21. Bamberg Swamp and Bog Lake (40P/7 258155)
22. Little Lakes Bog and Swamp Forest Complex (40P/7 065020)

RIVER VALLEY SYSTEMS

23. Maitland River Valley (40P/12 480415)
24. West Montrose River Valley (40P/9 443325)

UPLAND FORESTS

25. St. Agatha Beech-Maple Forest (40P/7 275070)
26. St. Helens Beech-Maple Forest (40P/13 570635)
27. Hatchex Hills Upland Woods (40P/8 465115)
28. Crosshill Upland Forest Complex (40P/10 230195)
29. Lackner Woods (40P/8 472105)
30. Speedside Forest (40P/9 583356)